



CDE TRACKING "A WAY"



- **BDE CHEMO / NCO VISITS SUBORDINATE UNITS.**
- **MONTHLY REPORTING WITH USR TO INCLUDE:**
 - (1) **MTOE EQUIPMENT (AUTH VS. O/H).**
 - (2) **CTA 50-970 ITEMS (CONTINGENCY VS TRAINING STOCKS).**
 - (3) **SCHEDULED SERVICES.**
- **MONTHLY LOGISTICS REVIEW EMPHASIS.**
 - (1) **DEADLINED ITEMS.**
 - (2) **DUE IN STATUS.**
 - (3) **\$ FOR CTA AND PLL.**
 - (4) **SHELF LIFE INVENTORIES.**
 - (5) **MAINT ADVISORY MESSAGES.**
 - (6) **NEW EQUIPMENT FIELDING.**
- **MONTHLY CHEMICAL PERSONNEL MEETING.**



COMMAND vs. SUPPORT RELATIONSHIP



COMMAND: ORGANIC, ASSIGNED, ATTACHED, OPCON

ATTACHED: PARENT UNIT CANNOT PROVIDE LOGISTICAL SUPPORT OR COMMAND DECISIONS; RECEIVING UNIT RESPONSIBLE FOR C2 AND LOGISTICAL SUPPORT

OPCON: SUPPORTED UNIT NEEDS TASK ORGANIZATION AUTHORITY; HOWEVER, PARENT UNIT CAN PROVIDE AND COORDINATE LOGISTICAL SUPPORT

SUPPORT: GENERAL SUPPORT (GS), DIRECT SUPPORT (DS)

GENERAL SUPPORT:: HIGHER HQ REQUIRES CENTRAL CONTROL AND FLEXIBILITY IN EMPLOYING LIMITED CHEMICAL ASSETS

DIRECT SUPPORT: PROVIDES SUPPORT DIRECTLY TO THE NEEDS OF A SPECIFIC UNIT

WHICH RELATIONSHIP SHOULD CHEM ASSETS OPERATE UNDER?

TRAIN THE FORCE



NBC PROTECTION - HOW MUCH? WHO?



MOPP ANALYSIS:

- MISSION FACTORS: THREAT ASSESSMENT, PROTECTION AVAILABLE, WORK INTENSITY
- ENVIRONMENT FACTORS: TEMPERATURE, WBGT, TIME OF DAY
- SOLDIER FACTORS: WORK/REST CYCLE VS. CONTINUOUS WORK

AUTOMASKING CRITERIA: TIED TO TEMPLATED THREAT VS. ALL ARTILLERY

VULNERABILITY ASSESSMENT:

- DETAILED NBC SITUATION ESTIMATE IN TERMS OF BOTH FRIENDLY AND ENEMY CAPABILITIES AND VULNERABILITIES
- RESULTS ARE INTEGRATED INTO THE PLAN TO ACHIEVE THE APPROPRIATE LEVELS OF PROTECTION THAT BEST SUPPORTS THE FRIENDLY COURSE OF ACTION

**CONTINUOUS PROCESS APPLIED TO ALL AREAS OF THE
BATTLEFIELD**

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NBC DEFENSE PLAN?



RECON

- WHO IS LOOKING AT TEMPLATED P-CHEM? DOES IT HAVE TO BE THE FOXES? HOW DO THE TEMPLATED P-CHEM(s) AFFECT OUR SCHEME OF MANEUVER?
- WHO COMMAND AND CONTROLS FOX RECON? WHAT NETS DO THEY MONITOR / REPORT?
- HOW DO WE ENSURE VEHICLES AVOID P-CHEM? TRAFFIC CONTROL? VISUAL INDICATORS?

SMOKE

- WHAT IS THE TASK AND PURPOSE OF THE SMOKE MISSION?
- WHAT IS THE SMOKE TARGET(s) THAT SUPPORTS THE SCHEME OF MANEUVER? CAN THE AVAILABLE SMOKE ASSETS ACHIEVE THE TARGET(s)?
- WHAT IS THE TIME / EVENT EFFECTIVE SMOKE ON TARGET? WHAT IS THE TIME / EVENT EFFECTIVE SMOKE NO LONGER ON TARGET?
- TAKE INTO ACCOUNT BUILD UP TIME / WEATHER CONDITIONS?

DECON

- ARE DECON SITES PLANNED IAW THE TEMPLATED P-CHEM?
- WHO PROVIDES DETAILED TROOP DECON PERSONNEL AND SUPPLIES?
- IS THERE A PLAN FOR OPERATIONAL DECON TO MAINTAIN COMBAT POWER?
- WHAT IS THE REQUIRED TIME TO TRANSITION FROM SMOKE TO DECON?



PLANNING CONSIDERATIONS FOR MOPP READY



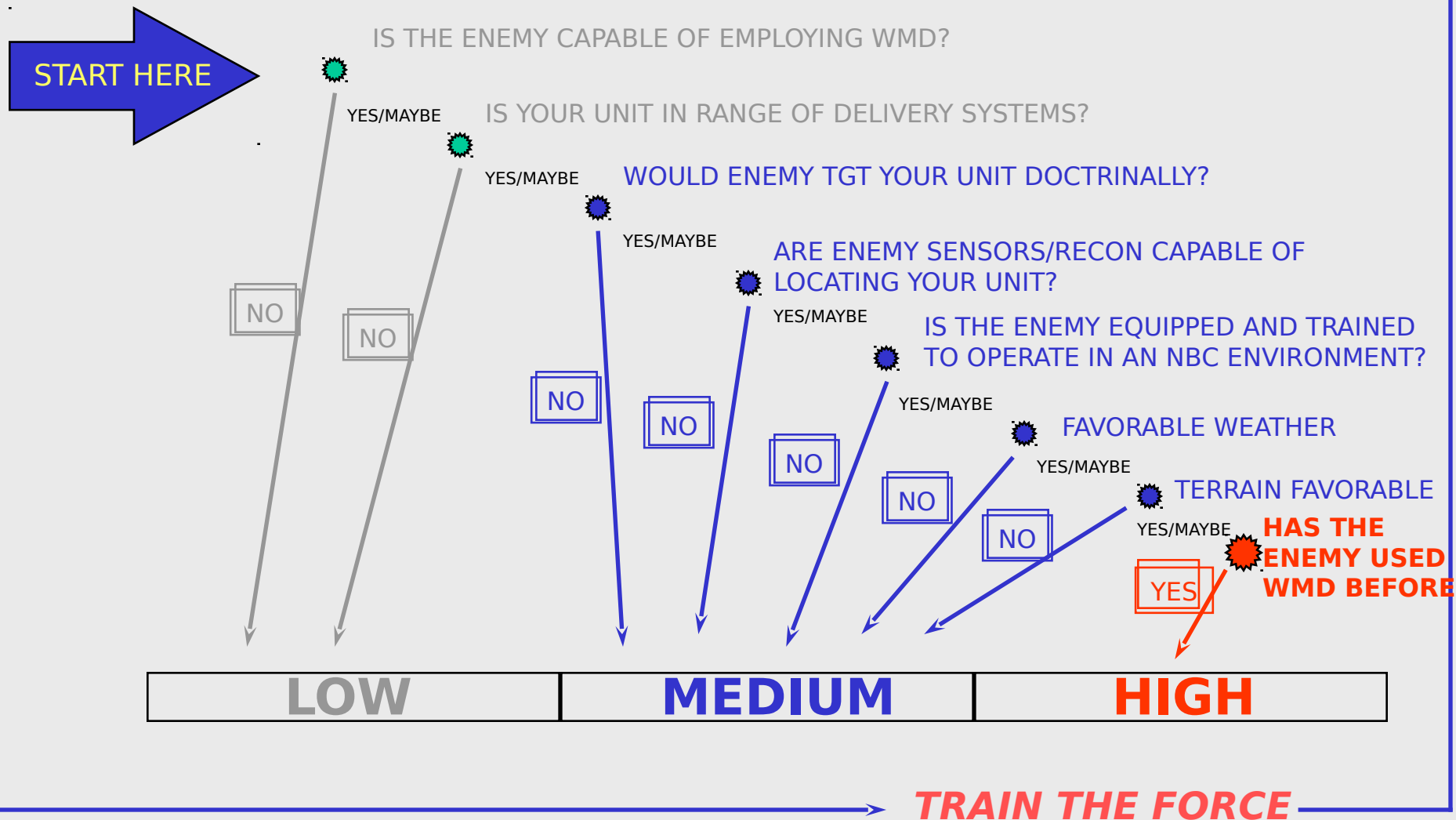
MOPP READY DEFINED:

- 1) SOLDIERS CARRY **PRO MASK**
- 2) SOLDIERS MOPP GEAR IS **LABELED** AND
NO FURTHER BACK THAN **BSA** AND
BROUGHT FORWARD WHEN NEEDED
- 3) PUSHING FWD SHOULD **NOT EXCEED 2 HRS.**
A SECOND SET IS AVAILABLE IN **6 HRS**
- 4) MOPP READY SOLDIERS WILL HAVE **FIELD
EXPEDIENT** ITEMS IDENTIFIED FOR USE
(I.E. PONCHO/TARP)

NOTE: UNITS IN MOPP READY ARE HIGHLY VULNERABLE TO PERSISTENT AGENT ATTACKS AND WILL AUTOMATICALLY UPGRADE TO MOPP ZERO WHEN THEY DETERMINE, OR ARE NOTIFIED, THAT CHEMICAL WEAPONS HAVE BEEN USED OR THAT THE THREAT FOR USE OF CHEMICAL WEAPONS HAS RISEN.



NBC RISK ANALYSIS AID





USE NBC IPB PROCESS TO:



- ❑ DIRECT, COLLECT, PROCESS AND DESSEMINATE NBC INTELLIGENCE**
- ❑ ASSESS VULNERABILITY TO ENEMY USE OF WEAPONS OF MASS DESTRUCTION**
- ❑ PROVIDE INPUT TO FRIENDLY COA AND HOW WMD USE WILL ALTER THE FRIENDLY SCHEME OF MANEUVER AND FUTURE OPERATIONS**
- ❑ IS THE BASIS FOR PLANNING DECON OPS, SMOKE EMPLOYMENT AND EMPLOYMENT OF CHEMICAL ASSETS**
- ❑ CONDUCT MOPP ANALYSIS AND RECOMMEND APPROPRIATE MOPP LEVEL FOR UPCOMING MISSION**
- ❑ CONTAMINATION AVOIDANCE MEASURES / NBC PROTECTION MEASURES**



STATUS OF CHEMICAL ASSETS

□ MONITORS STATUS OF RECON, SMOKE, AND DECON UNIT / ELEMENT MISSION

- PLOTS ALL RECON, DECON AND SMOKE MISSIONS BEING CONDUCTED**
- MONITORS NEEDS OF SUBORDINATE UNITS BASED ON MISSION REQUIREMENTS**
- MONITORS AND ASSISTS IN REQUESTS FOR ADDITIONAL SERVICE SUPPORT**

□ MONITORS NBC OPERATIONS:

- RECEIVES, COORDINATES, AND DISSEMINATES NBC INFORMATION ACCURATELY AND TIMELY**



PROTECTION REQUIRED/ CHEMICAL THREAT



THREAT CHEMICAL AGENTS					
TYPE AGENT/ SYMBOL		EFFECTS ON SOLDIERS	RATE OF ACTION	HOW DISSEMINATED	PROTECTION REQUIRED
NERVE NP P	GA GB GD VX	INCAPACITATES AT LOW CONCENTRATIONS; <u>KILLS IF INHALED</u> OR <u>ABSORBED</u> THROUGH THE <u>SKIN</u> OR <u>EYES</u>	VERY RAPID BY INHALATIO N, SLOWER THROUGH SKIN	AEROSOL OR VAPOR	PROTECTIVE MASK AND PROTECTIVE CLOTHING
BLOOD	AC CL	<u>KILLS</u> IF HIGH CONCENTRATIONS ARE INHALED	RAPI D	AEROSOL OR VAPOR	PROTECTIVE MASK
BLISTER	HD HL HN L CX	<u>BLISTERS SKIN</u> AND <u>RESPIRATORY</u> <u>TRACT</u> ; CAN CAUSE TEMP BLINDNESS. SOME AGENTS STING.	BLISTERS DELAYED HOURS TO DAYS	LIQUIDS OR DROPLETS	PROTECTIVE MASK AND PROTECTIVE CLOTHING

FM 3-7

→ TRAIN THE FORCE



HOW DO WE TASK ORGANIZE FORCE FOR SUCCESSFUL DECON OPERATIONS?



COORDINATED EXECUTED

- ➔ EN SUPPORT
- ➔ MP - TRAFFIC CONTROL
- ➔ WATER SUPPORT (WHEN, WHERE)
- ➔ SITE SELECTION
- ➔ AUGMENTEES (HOW MANY, WHERE)
- ➔ LOGISTICS / CDE RESUPPLY
- ➔ PATIENT DECON
- ➔ CHEM CASUALTY EVAC

➔ **TRAIN THE FORCE**



DECON LEVELS/TECHNIQUES



LEVEL	TECHNIQUE	BEST START TIME*	DONE BY	GAINS
IMMEDIATE	SKIN DECON	BEFORE 1 MINUTE	INDIVIDUAL	STOPS AGENT FROM PENETRATING
	PERSONNEL WIPEDOWN	WITHIN 15 MINUTES	INDIVIDUAL OR CREW	
	OPERATOR SPRAYDOWN			
OPERATIONAL	MOPP GEAR EXCHANGE**	WITHIN 6 HOURS	UNIT	POSSIBLE TEMP RELIEF FROM MOPP4, LIMITS LIQUID AGENT SPREAD
	VEHICLE WASDOWN***		BN CREW OR DECON PLT (-)	
THOROUGH	DETAILED EQUIP DECON	WHEN MISSION ALLOWS RECONSTITUTION	DECON PLT	PROBABLE LONG-TERM MOPP REDUCTION W/ MINIMUM RISK
	DETAILED TROOP DECON		UNIT	

* THE TECHNIQUE S BECOME INCREASINGLY LESS EFFECTIVE THE LONGER THEY ARE DELAYED

** PERFORMANCE DEGRADATION AND RISK ASSESSMENT NEED TO BE CONSIDERED WHEN EXCEEDING 6 HOURS (SEE FM 3-4), BDO RISK ASSESSMENT

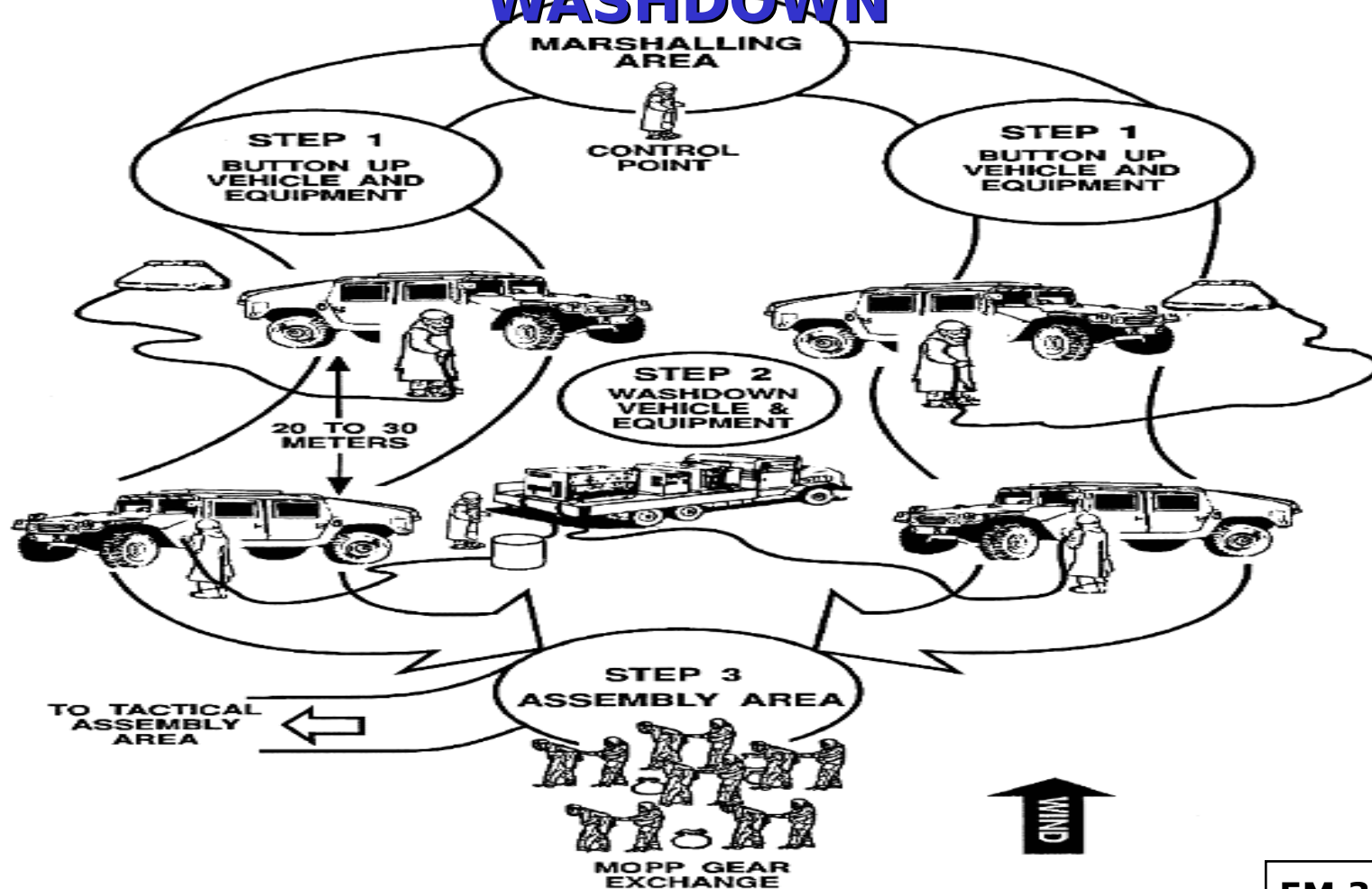
*** VEHICLE WASHDOWN IS MOST EFFECTIVE WITHIN 1 HOUR, BUT WILL OFTEN HAVE TO BE DELAYED FOR LOGISTICAL REASONS.



OPERATIONAL DECON

"A WAY"

SUPPORTED TWO-LANE WASHDOWN



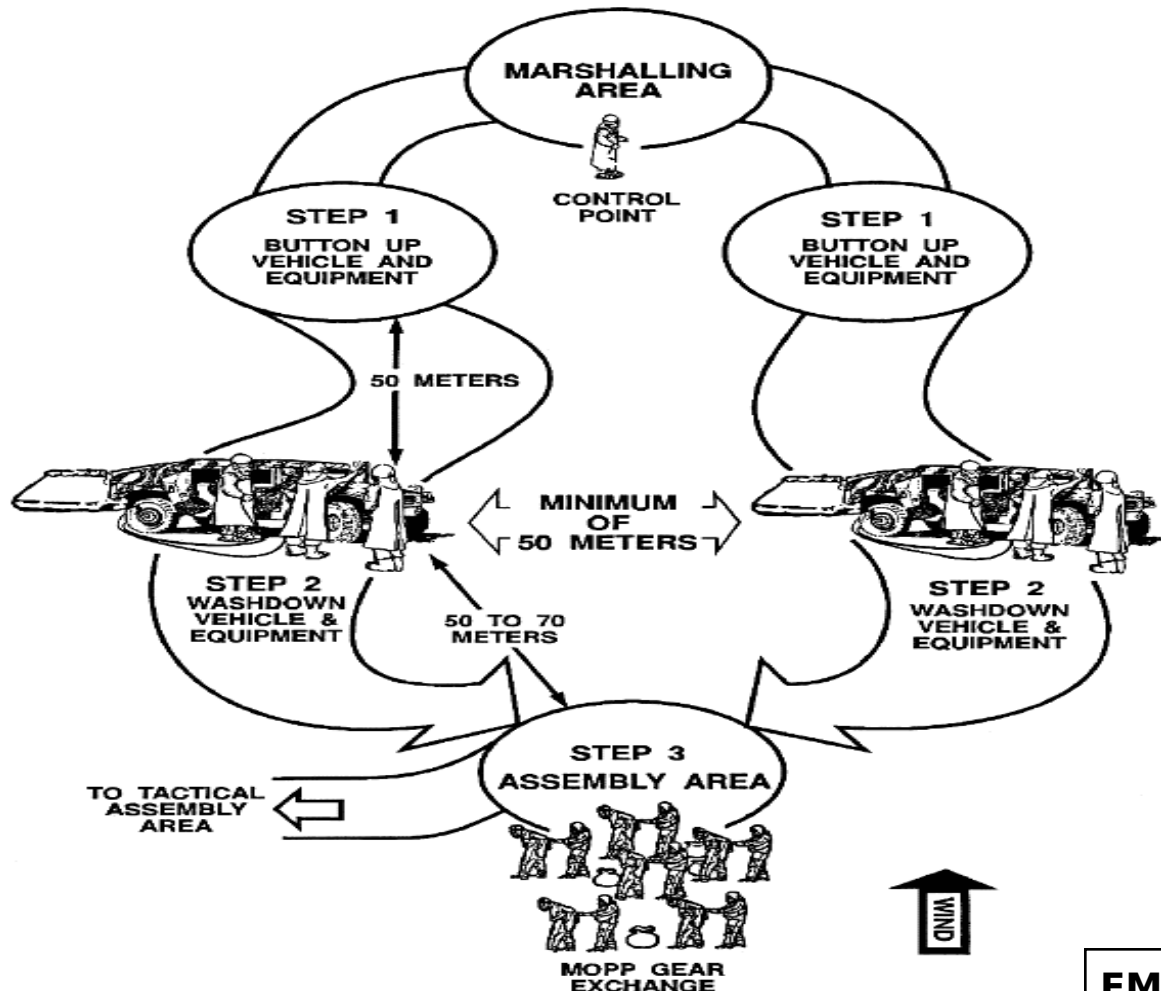
FM 3-5



OPERATIONAL DECON "A WAY"



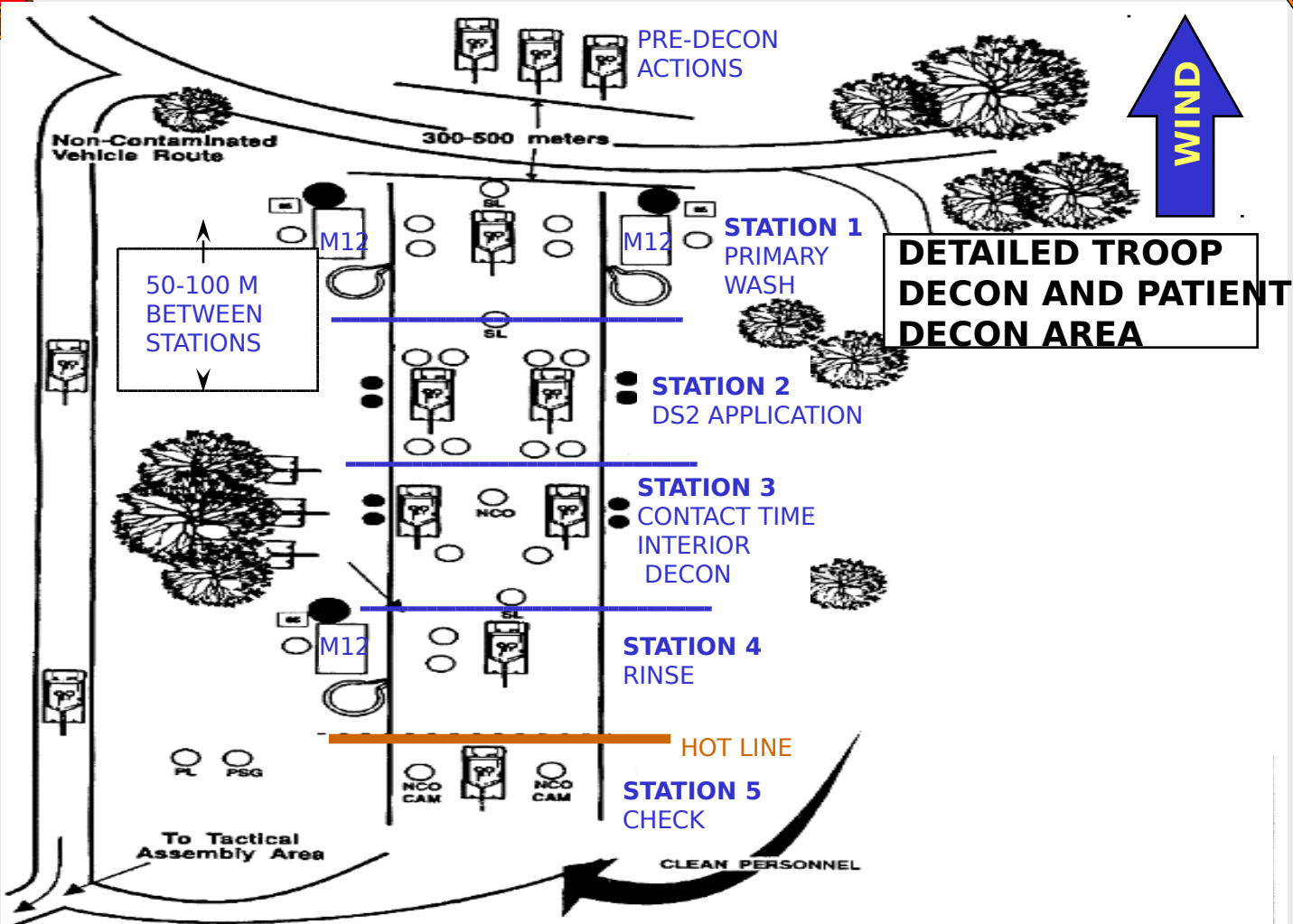
UNSUPPORTED TWO LANE WASHDOWN



FM 3-5



THOROUGH DECON "A WAY"



FM 3-5



THOROUGH DECON CONCEPT



TASK ORGANIZATION

C2 ELEMENT (BN/BDE XO)

DECON PLT (SITE C2)

BN PDDE CREW TO AUGMENT IF NEEDED

DETAIL PERSONNEL FROM PARENT UNIT

MPs FOR TCPs

ENG SPT

ADA COVERAGE

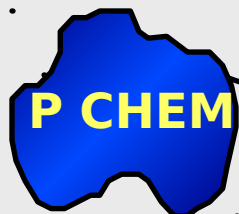
SECURITY ELEMENT

MEDICAL TO INCLUDE PATIENT DECON TEAM (PD)

WATER SUPPORT W/CONTINUOUS RESUPPLY PL

CDE RESUPPLY

LOGISTICAL/MAINTENANCE SPT/RECOVERY ASSE



DIRTY ROUTE
FOR CONTAMINATED
UNIT

LINK UP
POINT WITH
DECON PL

(THOROUGH DECON SITE)

PRE DECON
STAGING
AREA

PRE-DECON ACTIONS:

- 1) SEGREGATE
CLEAN VEH
FROM DIRTY
- 2) PREP VEH FOR
DECON

250 -500 M

DETAILED EQUIP DECON

DETAILED TROOP DECON

PDS

LCL VCL

1 KM

POST DECON
AA

RECONSTITUTION
AREA

CLEAN VEHICLES

WIND

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OPERATIONAL DECON CONCEPT



TASK ORGANIZATION

OF SITES

BN PDDE CREW (1 X M12 or 2 X M17s) (1)

HVY DECON PLT (3 X M12s) (3)

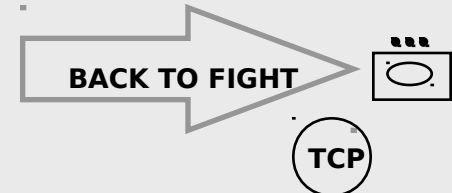
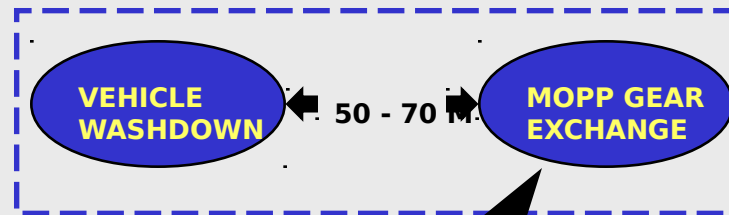
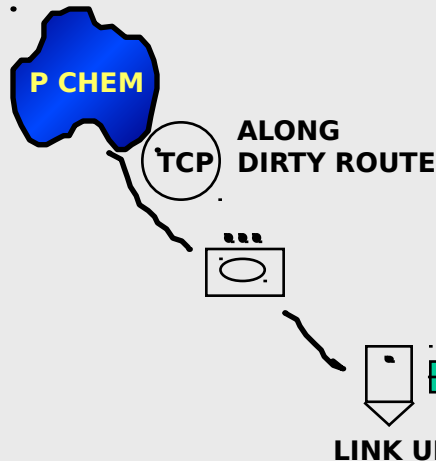
DUAL PURPOSE PLT (6 X M17s) (3)

WATER SPT

TRAFFIC CONTROL POINTS AND SECURITY

(OPERATIONAL DECON SITE)

OBJECTIVE OF OPERATIONAL DECON:
REDUCE LEVEL OF CONTAMINATION
TO REGENERATE NEEDED CBT POWER



GAINS BY OPERATIONAL DECON :

- LIMITS TRANSFER HAZARDS BY REMOVING GROSS CONTAMINATION
- SPEEDS WEATHERING PROCESS
- ALLOWS TEMPORARY RELIEF FROM MOPP 4
- ALLOWS FLEXIBILITY FOR MULTIPLE DECON SITES

LIMITATIONS:

- DOES NOT GUARANTEE CONDITIONS TO SAFELY ALLOW UNMASKING ON OR NEAR EQUIPMENT
- PLATOONS OR COMPANIES ROTATE SQUAD SIZE ELEMENTS THROUGH DECON SITE ONE AT A TIME

CDE
RESUPPLY/
WATER SPT/
MED SPT



**CRITICAL
FOR MISSION
EXECUTION**

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PRINCIPLES OF DECON



THE PRIMARY PURPOSES OF DECON ARE TO STOP EROSION OF COMBAT POWER AND REDUCE CASUALTIES THAT MAY RESULT FROM INADVERTENT EXPOSURE OF FAILURE OF PROTECTION.

DECON IS COSTLY IN TERMS OF MANPOWER, TIME, SPACE, AND MATERIAL.

PRINCIPLES:

- **SPEED - DECONTAMINATE AS SOON AS POSSIBLE TO RESTORE FULL COMBAT POTENTIAL AS SOON AS POSSIBLE**
- **NEED - DECONTAMINATE ONLY WHAT IS NECESSARY**
- **LIMIT - DECONTAMINATE AS CLOSE TO SITE OF CONTAMINATION AS POSSIBLE TO LIMIT ITS SPREAD**
- **PRIORITY - DECONTAMINATE THE MOST IMPORTANT ITEMS FIRST AND THE LEAST IMPORTANT ITEMS LAST**

FM 3-5

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REQUEST FOR DECON SUPPORT "A WAY"



"D" REPORT

LINE:

- 1) REQUESTING UNIT CALL SIGN: BULLDOG 06
- 2) REQUESTING UNIT SINCGARS OR MANUAL MODE FREQ: 403
- 3) A = OPERATIONAL B = THOROUGH
- 4) TYPE AGENT TO BE DECONTAMINATED: NERVE VX
- 5) EQUIPMENT TO BE DECONTAMINATED BY TYPE AND# :

A) # M1s <u>10</u>	F) # HEMMETs <u> </u>	K) OH-58s <u> </u>
B) # M2s <u>4</u>	G) # 5 TONs <u>1</u>	L) OTHER <u> </u>
C) # M113s <u>2</u>	H) # HMMWVs <u>1</u>	
D) # M109s <u> </u>	I) # UH-60s <u> </u>	
E) # M88s <u>1</u>	J) # AH-64s <u> </u>	
- 6) NUMBER OF PERSONNEL 54 NUMBER OF CHEM CASUALTIES 15
- 7) MOVEMENT DATA:

A) CURRENT LOCATION (GRID): <u>NV435160</u>
B) ROUTE OF MARCH: <u>Dirty MSR GOLD</u>
C) DESTINATION: <u>Link up point w/ Decon PL/NV 480170</u>
- 8) LINKUP POINT/TERRAIN FEATURE: NV480170 Central Corridor N wall
- 9) DECON SITE/MISSION LOCATION: NV490170
- 10) SPECIAL INTRUCTIONS: ie Patient Decon Needed/MPs for TCPs

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KEEP FOX RECON IPB FOCUSED!!

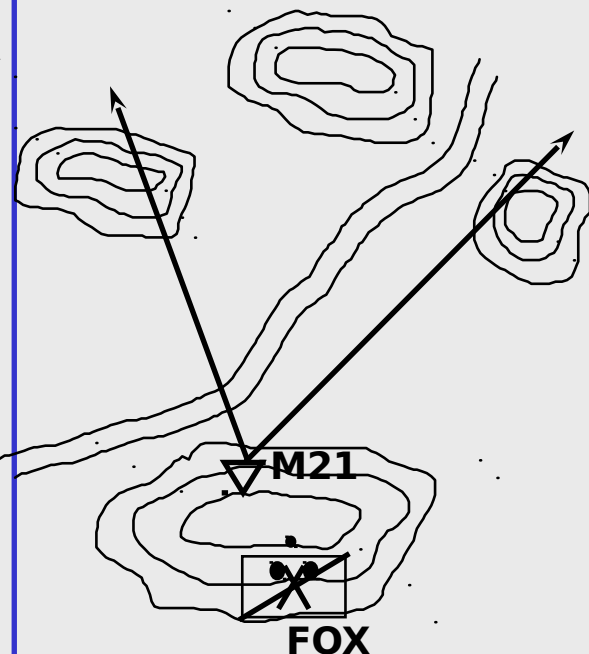
- **FOCUS FOX RECON EFFORT ON THE TEMPLATED THREAT (P-CHEM) THAT HAS THE GREATEST IMPACT ON THE FRIENDLY COURSE OF ACTION**
- **DOES CONFIRMATION OR DENIAL REQUIRE A DECISION FROM THE COMMANDER? (DECISION POINT)**
- **INCLUDE EFFORTS OF FOX RECON IN THE R&S PLAN AND COLLECTION MATRIX**
- **FOX RECON CANNOT BE EVERYWHERE. TASK CONVENTIONAL ASSETS TO OVERWATCH CHEMICAL NAIS ALSO**



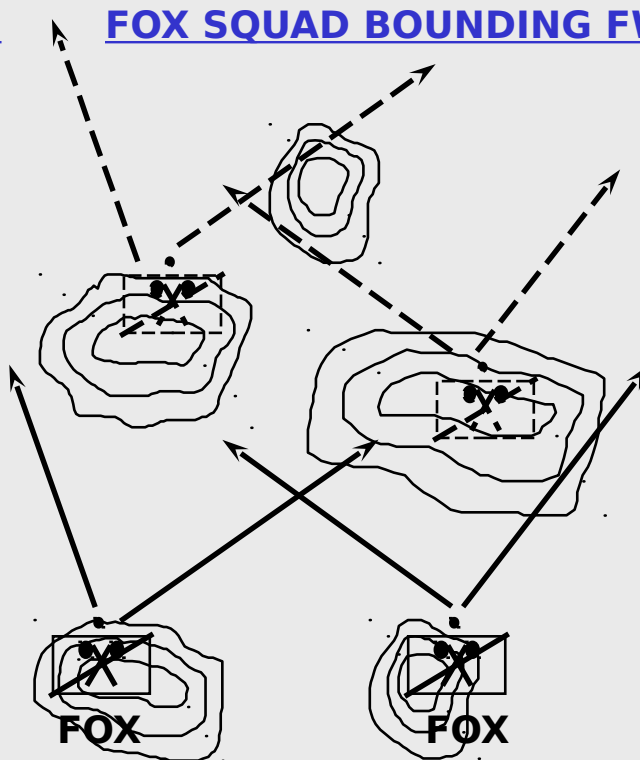
NBC SURVEILLANCE TECHNIQUES



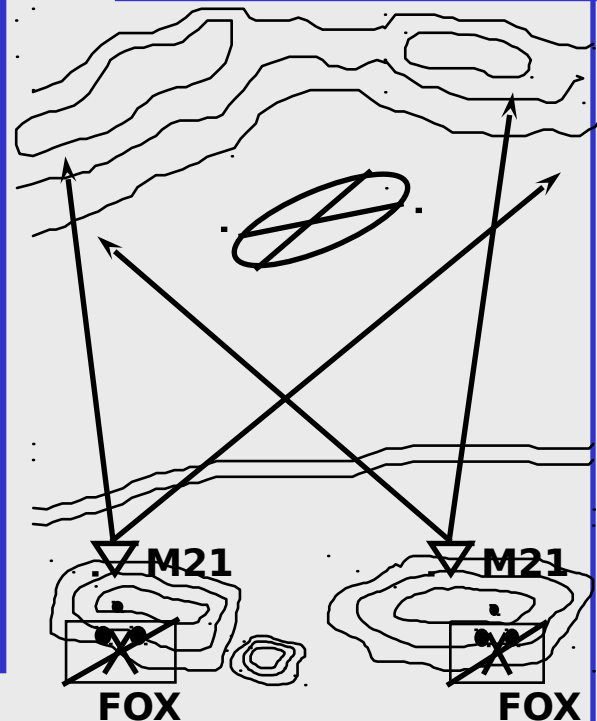
SINGLE DISMOUNTED M21



FOX SQUAD BOUNDING FWD



AREA SURVEILLANCE FROM DISMOUNTED OPS



CAPABILITIES OF M21 RSCAAL:

- RANGE 5KM WITH 60 DEGREE RANGE FAN
- DETECTS NERVE AND BLISTER VAPORS
- BEST EMPLOYED WITH PAIRS OF M21's FIELD OF VISION (FOV) INTERLOCKING
- CAN SLAVE OFF HMMWV VEHICLE POWER

FM 3-101-2



NBC RECON PLANNING CONSIDERATIONS



- ➔ **USE THE IPB PROCESS TO IDENTIFY NAIs FOR NBC RECON**
- ➔ **ASSESS TIME DISTANCE FACTORS FOR THE CONDUCT OF NBC RECON OPERATIONS**
- ➔ **ESTABLISH COMMAND AND SUPPORT RELATIONSHIPS TO ENSURE RESPONSIVENESS AND FLEXIBILITY TO SUPPORTED UNIT**
- ➔ **ORIENT MISSION EXECUTION ON PROVIDING TIMELY NOTIFICATION OF CRITICAL INFORMATION TO SUPPORT TACTICAL DECISIONS**
- ➔ **ORIENT NBC RECON ON THE PRESENCE OR ABSENCE OF NBC CONTAMINATION IN AREAS OF INTEREST**
- ➔ **PLAN FOR RESUPPLY ACTIVITIES TO SUSTAIN NBC RECON OPERATIONS**
- ➔ **DETERMINE POSSIBLE LOCATIONS FOR AFTER-MISSION DECON**
- ➔ **PLAN FOR SECURITY TO PROTECT THE NBC RECON UNIT**
- ➔ **DETERMINE ROE TO PREVENT FRATRICIDE**

FM 3-19

NOTIFY FRIENDLY UNITS IN AREA OF RECONNAISSANCE THAT FOX VEHICLES WILL BE IN AREA SO THAT FRIENDLY FORCES WILL NOT ENGAGE THE FOXs

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PRINCIPLES OF NBC RECONNAISSANCE

- ➔ THE GOAL OF NBC RECON IS TO PROVIDE COMBAT INFORMATION TO ALLOW FRIENDLY FORCES TO AVOID CONTAMINATED AREAS.
- ➔ NBC RECON IS PART OF THE OVERALL INTELLIGENCE COLLECTION EFFORT
- ➔ NBC RECON MISSIONS ARE CONDUCTED WHEREVER THE ENEMY HAS THE CAPABILITY EMPLOYING NBC WEAPONS

NBC RECON OPERATIONS ARE PLANNED AND PERFORMED WITH SIX FUNDAMENTALS IN MIND

- RETAIN FREEDOM OF MANUEVER
- ORIENT ON THREAT
- REPORT ALL INFORMATION RAPIDLY AND ACCURATELY
- DEVELOP ALL INFORMATION RAPIDLY AND ACCURATELY
- DEVELOP THE SITUATION RAPIDLY
- AVOID CONTACT WITH ENEMY FORCES
- MAXIMIZE THE CAPABILITY OF NBC RECON UNITS

FM 3-19

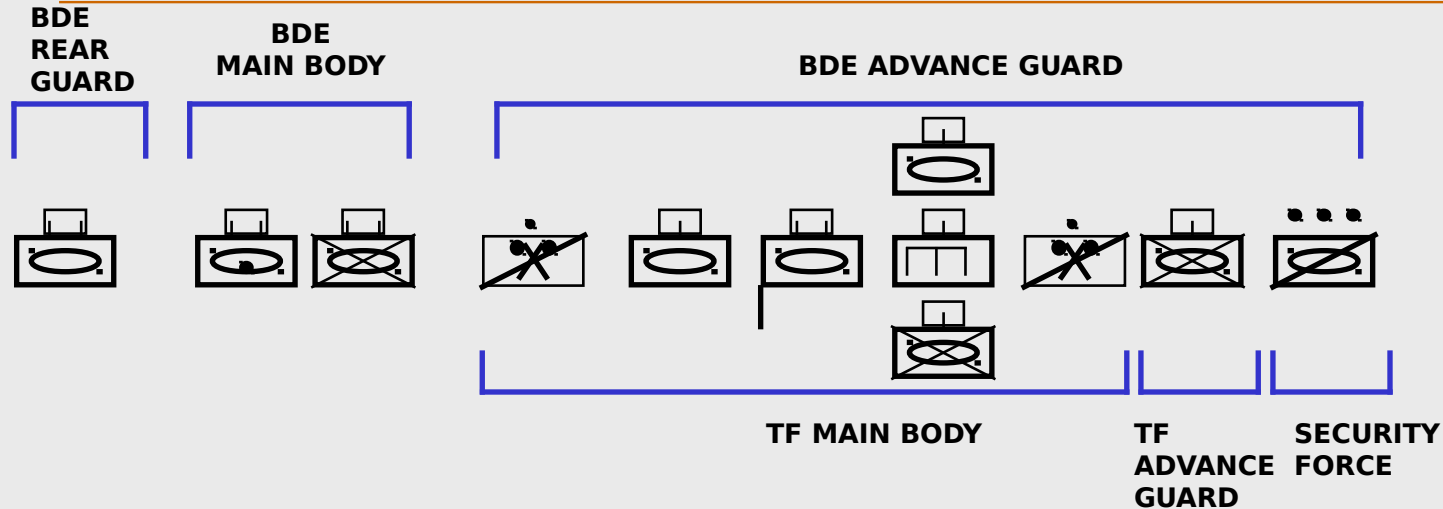
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NBC RECON PLANNING CONSIDERATIONS FOR MTC



MOVING INSIDE SUPPORTED FORCE'S FORMATION DURING A MTC



PLANNING CONSIDERATIONS

- FOCUS OF NBC RECON OPERATIONS IS TO PROVIDE THE COMMANDER FLEXIBILITY
- TASK ORGANIZE SUPPORTING NBC RECON UNITS BASED ON THE IPB AND METT-T
- IDENTIFY KNOWN OR SUSPECTED AREAS OF CONTAMINATION
- PRIORITY OF NBC RECON SUPPORT TO LEAD MANUEVER FORCES
- THE ADVANCE GUARD FORCE SHOULD BE NBC RECON HEAVY
- COORDINATE FOR (AFTER MISSION) DECON

FM 3-19/FM 3-101-2

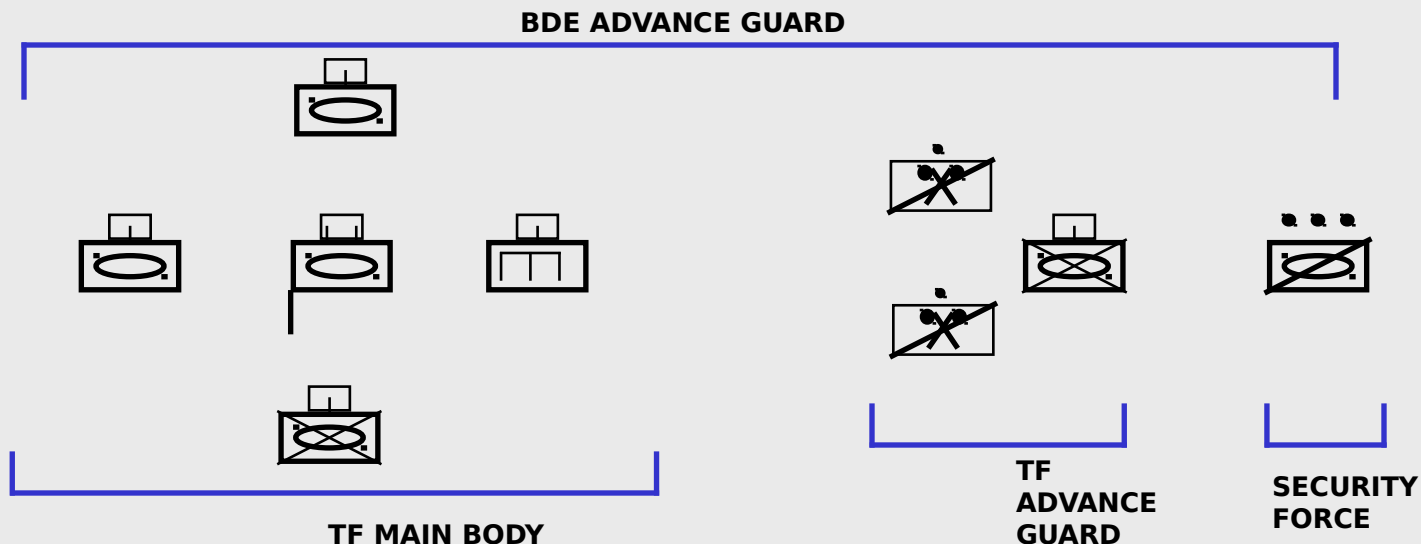
→ **TRAIN THE FORCE** ←



NBC RECON PLANNING CONSIDERATIONS FOR MTC



MOVING ON THE FLANK OF THE SUPPORTED FORCE'S FORMATION DURING A MTC



PLANNING CONSIDERATIONS

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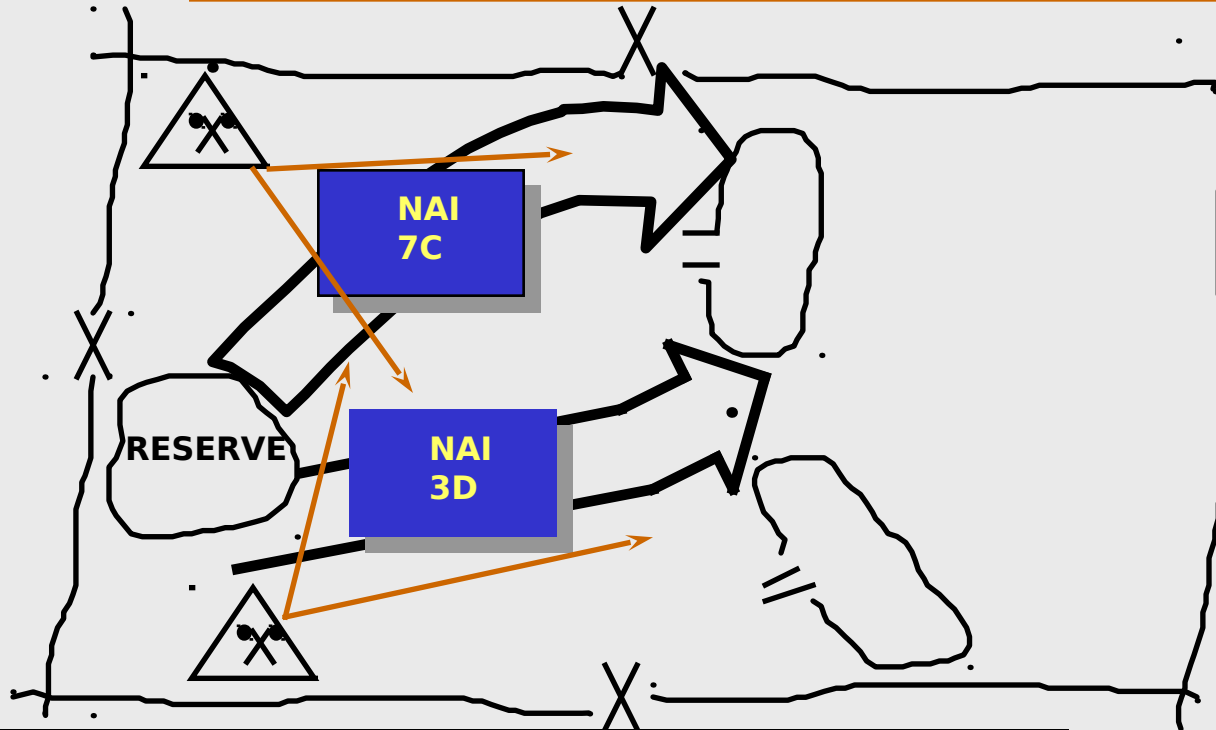
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NBC RECON PLANNING CONSIDERATIONS FOR THE DEFENSE



NBC RECON IN SUPPORT OF A DEFENSE IN SECTOR



NBC RECON MISSIONS FOR THE DEFENSE

- ROUTE RECON
- CONFIRM OR DENY NBC HAZARDS IN IDENTIFIED NAIs
- PERFORM RECON AS PART OF QUARTERING PARTY
- SUPPORT THE COUNTERATTACK OF THE RESERVE

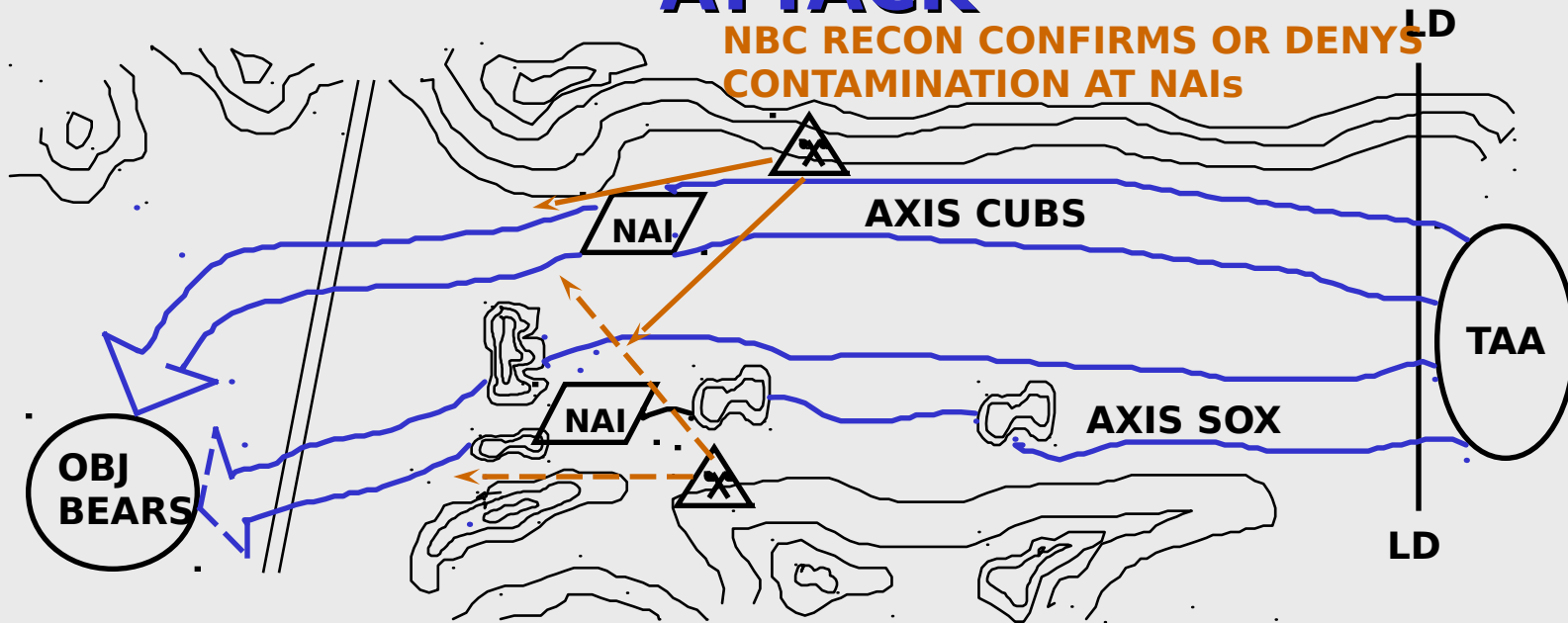
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NBC RECON HASTY AND DELIBERATE ATTACK



NBC RECON CONFIRMS OR DENYS
CONTAMINATION AT NAIs



PLANNING CONSIDERATIONS

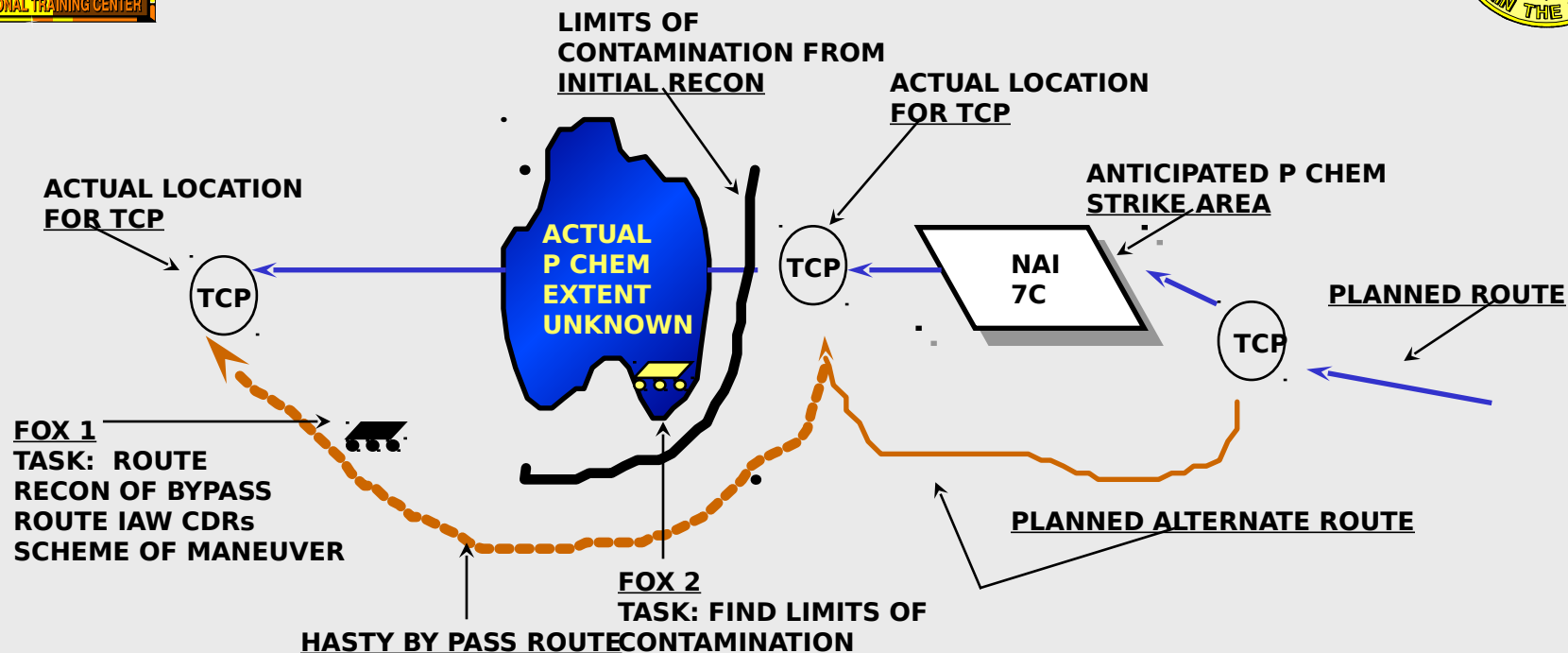
- USE NBC RECON OPERATIONS TO PROVIDE THE COMMANDER FLEXIBILITY AND FACILITATE SYNCHRONIZATION
- IDENTIFY KNOWN OR SUSPECTED AREAS AND POSSIBLE BY-PASS ROUTES OF CONTAMINATION
- FOCUS NBC RECON ASSETS TO RETAIN FREEDOM OF MANEUVER
- GIVE PRIORITY OF NBC RECON SUPPORT TO LEAD MANEUVER FORCES
- IDENTIFY POSSIBLE CONTAMINATED AREAS

FM 3-19

TRAIN THE FORCE

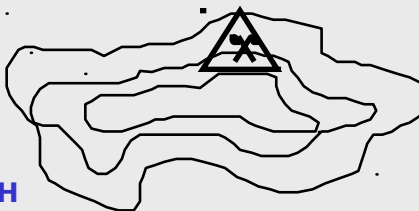


TRAFFIC MANAGEMENT IN A NBC ENVIRONMENT



PLANNING CONSIDERATIONS

- **PLAN BY-PASS ROUTES FOR EVERY TEMPLATED P-CHEM**
- **USE MPs FOR TCPs**
- **INITIAL RECON ONLY ESTABLISHES THE LIMITS ESSENTIAL FOR BYPASS; THOROUGH RECON IS LEFT UNTIL LATER**
- **ANY UNIT CAN DO THE INITIAL RECON WITH M8/M9 PAPER, HOWEVER, THE MOST PREFERRED IS WITH NBC RECON**



FOX OP

- **TASK: OBSERVE NAI 7C**
- **OBSERVES HIGH VOLUME ARTY GOING IN TO THE EAST OF NAI 7C; Q37 RADAR ALSO PICKS UP READ**
- **FOX SECTION INITIATES NBC RECON**



CAPABILITIES/LIMITATIONS

M93 FOX NBC RECON



CAPABILITIES

- **CONDUCTS NBC RECON AND SURVEY ON THE MOVE**
- **CONDUCTS NBC RECON MSNs WITHOUT EXITING THE VEH**
- **DETECTS AND IDENTIFIES 60 CHEMICAL AGENTS**
- **MARKING SYSTEM ALLOWS CONTAMINATION TO BE MARKED WITHOUT EXPOSING CREW**
- **ABILITY TO STORE DATA ON UNKNOWN SUSPECTED CHEMICAL AGENTS**
- **CAPABLE OF KEEPING UP WITH MANEUVER FORCES**

LIMITATIONS

- **NOT READILY RECOGNIZABLE AS FRIENDLY**
- **SPECIALIZED MAINTENANCE SPT REQUIREMENTS**
- **REQUIRES 15-20 MINUTES TO INITIALLY PREPARE MOBILE MASS SPECTROMETER (MM-1) FOR OPERATION**
- **NOT HEAVILY ARMORED**
- **MM-1 CANNOT OPERATE CONTINUOUSLY**
- **NO STAND-OFF CHEMICAL OR BIOLOGICAL DETECTION CAPABILITY**

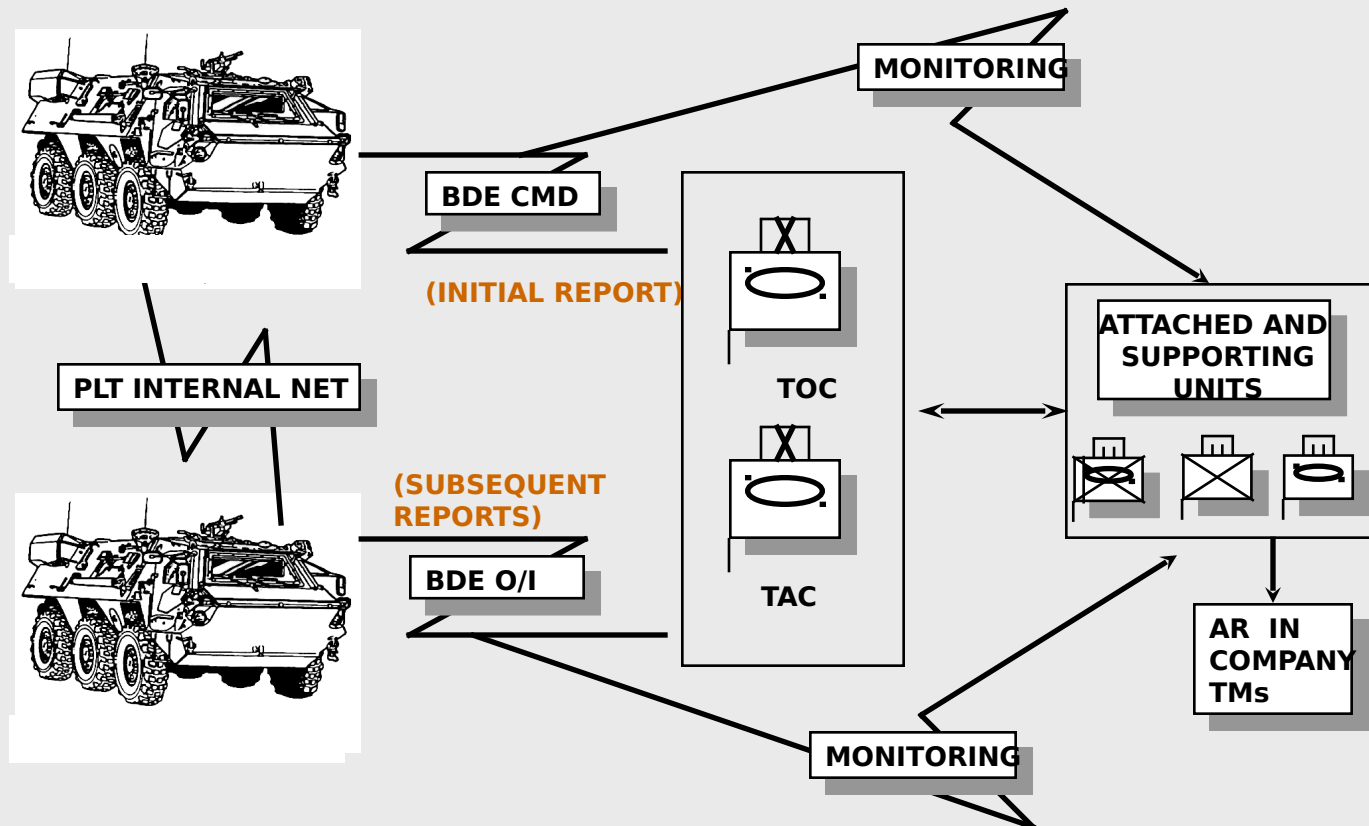
FM 3-101-2



COMMUNICATION STRUCTURE NBC RECON



CMD/SPT RELATIONSHIP: BCT CONTROL



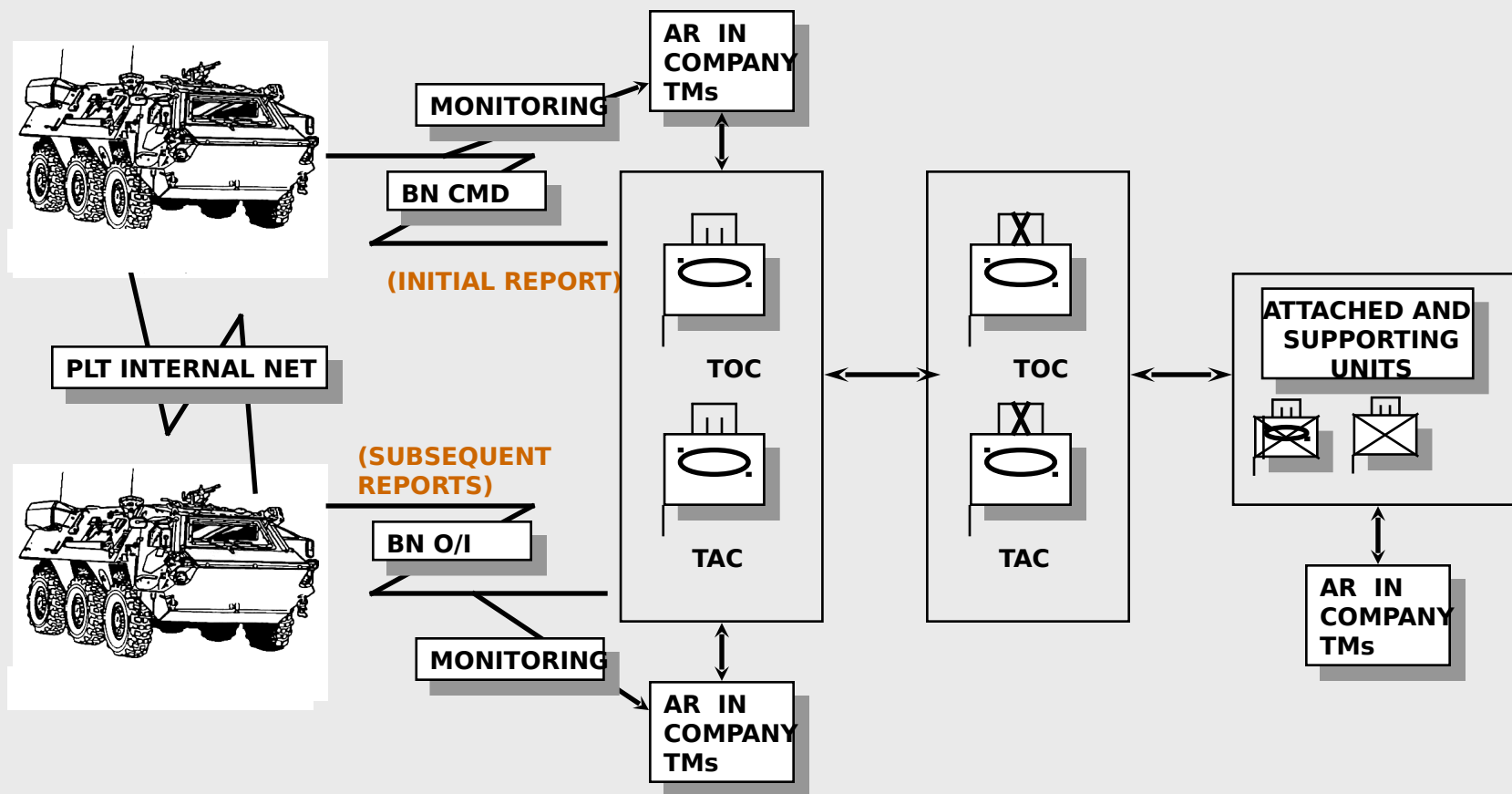
TRAIN THE FORCE



COMMUNICATION STRUCTURE NBC RECON



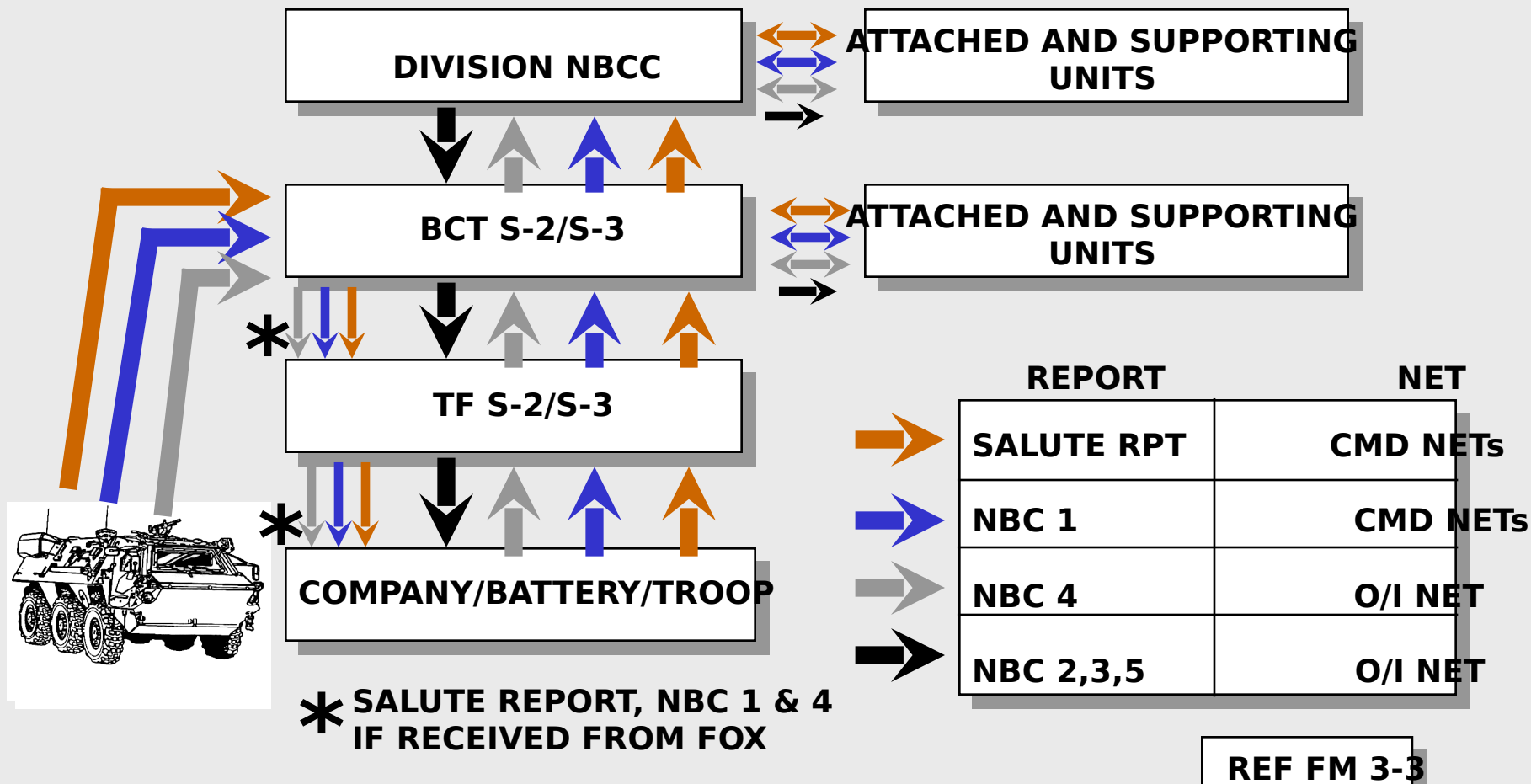
CMD/SPT RELATIONSHIP: OPCON TO A TF



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FLOW OF NBC REPORTS "A WAY"



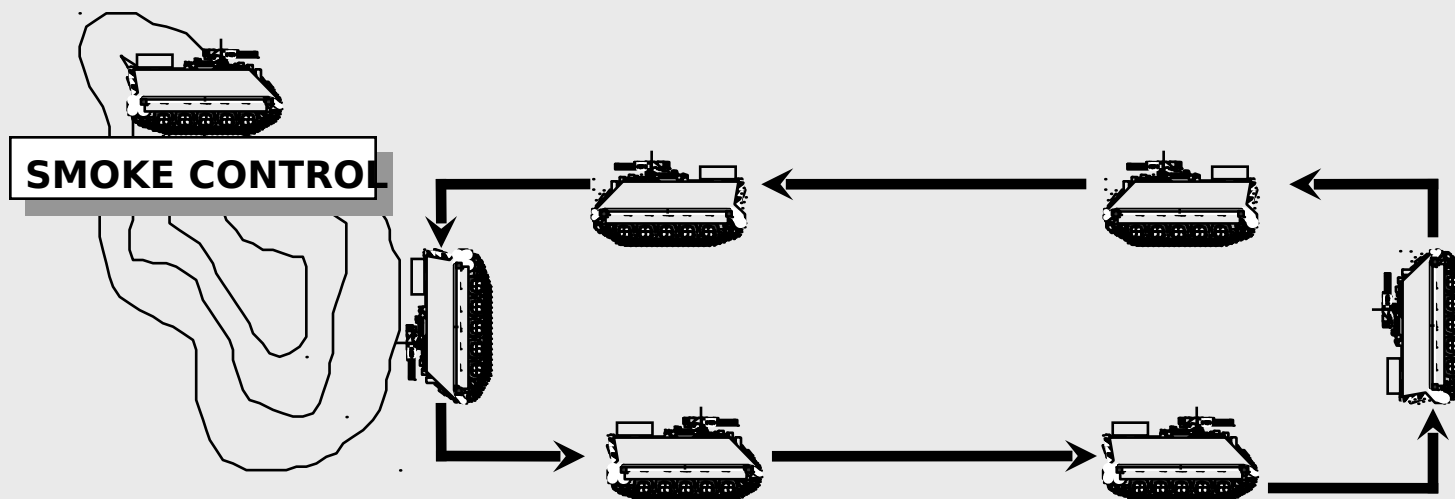


RACE TRACK TECHNIQUE

SMOKE TARGET



WIND





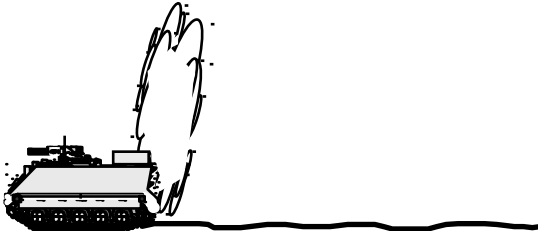
FM 3-101-1

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TEMPERATURE GRADIENT EFFECTS ON SMOKE



TIME OF DAY AND WEATHER CONDITIONS	TEMPERATURE GRADIENT	SMOKE BEHAVIOR (WIND DIRECTION →)
NIGHT - UNTIL 1 HR AFTER SUNRISE. WIND SPEED IS LESS THAN 9 KMPH (5 KNOTS). CLOUD COVER LESS THAN 30%.	STABLE (INVERSION) (IDEAL)	
DAY - MOST OFTEN BETWEEN 1 TO 2 HRS BEFORE AND AFTER SUNRISE. WIND SPEED IS 9 KMPH (5 KNOTS) OR MORE. CLOUD COVER IS 30% OR MORE	NEUTRAL (FAVORABLE)	
DAY - BEGINNING 2 HR AFTER SUNRISE. WIND SPEED IS LESS THAN 9 KMPH (5 KNOTS). CLOUD COVER IS LESS THAN 30%.	UNSTABLE (LAPSE) (MARGINAL)	

FM 3-50

TRAIN THE FORCE



SMOKE CONTROL



- NEARLY IMPOSSIBLE TO SEE HOW EFFECTIVE SMOKE IS FROM SMOKE LINE
- SMOKE CONTROL POINT MUST MAINTAIN COMMO WITH SUPPORTED UNIT AND SMOKE UNIT
- IMPERATIVE THAT SUPPORTED UNIT CDR OR S-3 MAINTAIN CONTACT WITH SMOKE UNIT TO ADVISE THEM IF THERE IS TOO MUCH OR TOO LITTLE SMOKE ON THE TARGET

SMOKE TARGET

SMOKE CONTROL

ALT SMOKE CONTROL

WIND

FM 3-101-1

TRAIN THE FORCE



CHEMICAL UNIT EMPLOYMENT PRINCIPLES



- **TASK ORGANIZE CHEMICAL UNITS TO REQUIREMENTS**
- **GIVE PRIORITY TO THE MAIN EFFORT (CHEMICAL UNIT RESOURCES ARE LIMITED)**
- **INTEGRATE CHEMICAL UNITS WITH FIRE AND MANEUVER (ESPECIALLY SMOKE AND RECON)**
- **DO NOT HOLD SMOKE AND NBC RECONNAISSANCE UNITS IN RESERVE**
- **ENSURE CURRENT CHEMICAL SUPPORT OPERATIONS PROMOTE FUTURE FORCE OPERATIONS**
- **BUILD A LOGISTICALLY SUSTAINABLE FORCE**
- **MAINTAIN EFFECTIVE BATTLE COMMAND**
- **USE ALL LOCAL RESOURCES**

TC 3-4

TRAIN THE FORCE



ESSENTIAL ELEMENTS FOR A SUCCESSFUL SMOKE MISSION



MANEUVER UNIT COMMANDER'S RESPONSIBILITIES

- **COMMANDER'S INTENT:**
 - **TASK:** i.e. Execute Smoke Curtain South of Axis of Advance
 - **PURPOSE:** Prevent Enemy AT5 Acquisition along Southern W (Central Corridor)
- **VISIBILITY CRITERIA:** Haze, Blanket, or Curtain
- **TARGET:** Location and size of target. (Designate smoke target as a T
- **TRIGGER:** Deliberate or Hasty Smoke based on time phased requirement
- **START TIME:** Time that effective smoke is on target - must allow for b target
- **STOP TIME:** Duration of effective smoke
- **SECURITY OF SMOKE ASSETS:** How and with what assets (Combat Pow

FM 3-50



BATTLEFIELD APPLICATIONS OF SMOKE



OBSCURING - ON ENEMY, BLIND GUNNERS AND OBSERVERS, USE OBSCURING SMOKE TO ATTACK AND DEFEAT ENEMY TARGET ACQUISITION AND GUIDANCE SYSTEMS AT THEIR SOURCE

SCREENING - USE SCREENING SMOKE TO ATTACK ENEMY TARGET ACQUISITION AND GUIDANCE SYSTEMS BY PLACING SMOKE BETWEEN THE FRIENDLY UNIT AND THE SENSORS. DEGRADES ENEMY GROUND AND AERIAL OBSERVATION.

THREE VISIBILITY CATEGORIES FOR SCREENING SMOKE:

SMOKE CURTAIN - Vertical development of smoke between enemy forces and friendly units, it will not hamper friendly operations but does prevent aerial observation.

SMOKE BLANKET - Dense smoke used over friendly areas to conceal from enemy ground and aerial observation - may degrade mobility
concentration of smoke that would allow ID of veh from 0 to 50 meters.

SMOKE HAZE - Light concentration of smoke placed on friendly units to restrict enemy observation and fire but not dense enough to disrupt friendly operations - ID of veh from 50 to 150 meters away

MARKING - IDENTIFY TARGET, COMMO/SIGNAL

PROTECTING - INDIVIDUAL COMBAT VEHICLE, DEFEAT ATGM TRACKING



PURPOSE OF SMOKE AND OBSCURANTS



THE US ARMY USES SMOKE AND OBSCURANTS TO:

- **ATTACK THREAT RECONNAISSANCE , SURVEILLANCE, AND TARGET AQUISITION (RSTA) EFFORTS**
- **PROTECT THE FORCE**
- **SUPPORT TACTICAL DECEPTION OPERATIONS**

SMOKE - SPECIFIC IMPACTS

- **SMOKE FAVORS THE ATTACKER; FORCE EXCHANGE RATIOS IMPROVE BY 25% TO 80% FOR THE EFFECTIVE SMOKE USER**
- **PROJECTED SMOKE IS IMPORTANT FOR SUCCESS, BUT RESOURCE INTENSIVE. FIRING UNITS REQUIRE 400% ABOVE NORMAL BASIC LOADS.**
- **SMOKE EMPLOYMENT MUST BE CAREFULLY PLANNED TO AVOID INTERFERENCE WITH FRIENDLY DIRECT FIRE SYSTEMS AND OTHER SUPPORTING TARGET AQUISITION AND EO SYSTEMS WHICH ARE DEGRADED OR DEFEATED BY SMOKE**

FM 3-50, TC 3-4, & TC 3-10



TYPES OF SMOKE OPERATIONS



DELIBERATE SMOKE - SUPPORT MOBILITY, COUNTERMOBILITY, SURVIVABILITY AND DECEPTION

- **EXTENSIVE COORDINATION - ADJACENT UNITS, TARGET ACQUISITION, RESOURCES**
- **EXTENDED OPERATIONS - LARGE AREA, LONG TIME**
- **SIGNIFICANT RESOURCES - SUPPORT DELIVERY/SMOKE UNITS, FUEL, SMOKE/SUPPLIES MUNITIONS**
- **SIGNIFICANT COMMO REQUIREMENTS**

HASTY SMOKE - LOCAL ON-CALL SMOKE, SAME PURPOSES

- **MINIMAL PLANNING, COORDINATION**
- **MINIMAL RESOURCES - LOCAL UNIT ASSETS**
- **SOP/ BATTLE DRILLS EXECUTION**

FM 3-50

→ TRAIN THE FORCE



KEY INSIGHTS ON SMOKE USE AT THE NTC



THE NATIONAL TRAINING CENTER (NTC) IS AN AREA WHERE SMOKE TRAINING IS POSSIBLE ON A LARGE FORCE-ON-FORCE SCALE.

QUOTE

“SMOKE IS A FAR MORE SIGNIFICANT BATTLEFIELD FACTOR THAN I USED TO BELIEVE. IT SIMPLY MUST BE A MAJOR PLANNING CONSIDERATION IN TERMS OF BOTH FRIENDLY EMPLOYMENT AND REACTION TO ENEMY USE.”

MG E.S. LELAND
Former Commander of the NTC

KEY INSIGHTS FOR THE OFFENSE:

- **SMOKE FAVORS THE ATTACKER**
- **SMOKE TIGHTENS ATTACK FORMATIONS**
- **WE MUST CAPITALIZE ON THERMAL IMAGER CAPABILITY**
- **WE MUST PLAN COMMAND AND CONTROL WITHOUT VISUAL CUES**
- **TRAINING AND REHEARSAL ARE THE KEYS TO SUCCESS**

FM 3-50

→ TRAIN THE FORCE



CHEMICAL STAFF OFFICER'S RESPONSIBILITY IN SMOKE PLANNING



THE CHEMICAL STAFF OFFICER PLANS AND MONITORS THE EXECUTION OF THE SMOKE PLAN, IN COORDINATION WITH THE FSO AND SMOKE UNIT COMMANDER.

- **DIRECT THE CHEMICAL STAFF MONITORING THE SMOKE SUPPORT PLAN**
- **MONITOR PLANNED SMOKE ENGAGEMENTS BY FIRE SUPPORT ASSETS**
- **MONITOR PLANNED SMOKE ENGAGEMENTS BY SMOKE UNIT ASSETS**
- **MONITOR PLANNED SMOKE EMPLOYMENT BY MANEUER UNITS (for example VEESS and SMOKE POTS)**
- **MONITOR IMMEDIATE CALLS FOR SMOKE**



SMOKE PLATOON'S ROLE FOR SOSR



OBSCURE

THE DELIBERATE BREACHING OPERATION MAY REQUIRE LARGE QUANTITIES OF CAREFULLY EMPLOYED ARTIFICIAL OBSCURATION TO SCREEN BREACH AND ASSAULT FORCES AND TO OBSCURE ENEMY FIRES. THIS IS PARTICULARLY IMPORTANT FOR COMPLEX BREACHING PROBLEMS WHERE THE BREACH FORCE IS EXPOSED FOR AN EXTENDED TIME. SMOKE, THEN, IS IMPORTANT IN DECEIVING THE ENEMY AS TO THE BREACHING LOCATION AND INTERFERING WITH HIS FIRES. IF SMOKE PLATOONS ARE AVAILABLE, THEY PROVIDE THE BULK OF THE SMOKE.

**FM 90-13-1
COMBINED ARMS
BREACHING
OPERATIONS**

TRAIN THE FORCE



OPERATIONAL CONCEPT FOR SMOKE AND OBSCURANTS



- **DEGRADES THE ENEMY'S ABILITY TO SEE**
- **DISRUPTS THE ENEMY'S ABILITY TO COMMUNICATE**
- **CONCEALS FRIENDLY FORCES**
- **DECEIVES THE ENEMY**
- **PROVIDES A MEANS TO IDENTIFY AND SIGNAL**
- **DEGRADES OR DEFEATS DIRECTED-ENERGY WEAPONS**

FM 3-

50



SMOKE PLANNING GUIDANCE



WHAT DO I WANT SMOKE AND OBSCURANTS TO ACCOMPLISH?
(DEGRADE TARGET ACQUISITION? CONCEAL THE MOVEMENT
OF MY MAIN ATTACK? AID IN DECEPTION?)

**WHERE AND HOW LONG AM I WILLING TO SUSTAIN THIS SMOKE
CLOUD?**
(OVER MY OWN POSITION? BETWEEN MY UNIT AND THE ENEMY?
ON THE ENEMY?)

HOW MUCH RESTRICTION IN MY OWN MOBILITY CAN I ACCEPT?
(VISIBILITY 50 METERS OR LESS? MORE?)

**HOW MUCH RESTRICTION IN MY OWN TARGET ACQUISITION AND
ENGAGEMENT CAPABILITIES CAN I ACCEPT?**
(IF I DENY ANOTHER'S LASER DESIGNATORS, I ALSO DENY MINE,
BUT MY THERMAL SIGHTS ARE UNAFFECTED)

WHEN MIGHT ON-CALL HASTY OR DELIBERATE SMOKE BENEFIT ME?
(WHERE DOES MY DECISION SUPPORT MATRIX INDICATE I MAY
BE EXPOSED AND NEED IMMEDIATE SMOKE TO OBSCURE THE ENEMY?)

HOW WILL COUNTERSMOKE HELP ME?
(IF THE ENEMY USES SMOKE, WHERE AND HOW SHOULD I RETALIATE
WITH SMOKE TO INTERFERE WITH THEIR SYNCHRONIZATION)

FM 3-
50



SMOKE IN THE OFFENSE



THE MAIN FOCUS OF SMOKE IN THE OFFENSE IS TO DEFEAT ENEMY RECONNAISSANCE, SURVEILLANCE, AND TARGET ACQUISITION (RSTA) EFFORTS, CONCEAL MANEUVER AND SUPPORT FORCES

SMOKE IS USED DURING THE OFFENSE TO - - -

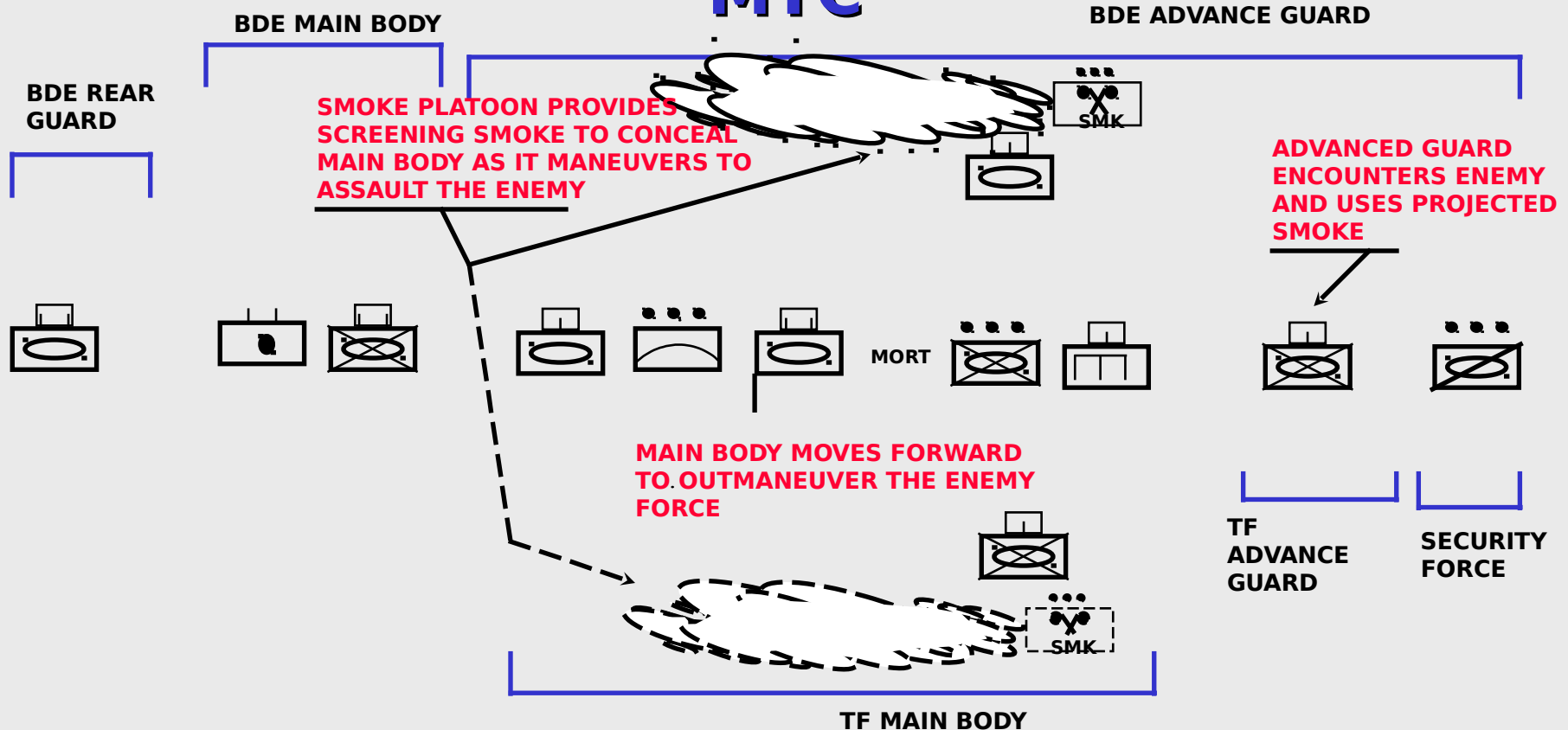
- **DEFEAT ENEMY SURVEILLANCE EFFORTS**
- **CONCEAL MOVING FORCES**
- **ISOLATE ENEMY DEFENSIVE POSITIONS**
- **CONCEAL MANEUVERING FORCES FROM ENEMY OBSERVATION**
- **PROVIDE TACTICAL SURPRISE AND ALLOW THE COMMANDER TO SET THE TERMS OF COMBAT**
- **ALLOW THE COMMANDER TO MASS FORCES UNOBSERVED**
- **SUPPORT THE DECEPTION PLAN**
- **CONCEAL OBSTACLE BREACHING**
- **DEFEAT ENEMY WEAPONS BY DEFEATING ENEMY TARGET ACQUISITION EFFORTS, DEFEATING GUIDANCE SYSTEMS, AND NEGATING STANDOFF CAPABILITY OF ENEMY LONG-RANGE DIRECT FIRE WEAPONS.**

**FM 3-
101-1**

→ TRAIN THE FORCE

SMOKE OPERATIONS

MTC



PLANNING CONSIDERATIONS:

- MOST SMOKE OPERATIONS DURING A MTC WILL BE HASTY SMOKE, INITIATED BECAUSE OF ENEMY CONTACT
- USE OF PROJECTED SMOKE SHOULD BE COORDINATED WITH THE EMPLOYMENT OF THE SMOKE PLATOON
- TYPICALLY, SMOKE PLATOON IN SPT OF MANEUVER FORCES WILL MOVE WITH THE MAIN BODY

FM 3-101-



SMOKE IN THE HASTY ATTACK



SMOKE UNITS WILL BE EMPLOYED WITH THE SUPPORTED FORCE TO PROVIDE LARGE-AREA SMOKE SCREENS TO HINDER ENEMY OBSERVATION AND CONCEAL FRIENDLY MANEUVER

SMOKE USE IN THE HASTY ATTACK

- **SCREEN THE MOVEMENT OF THE TASK FORCE**
- **OBSCURE ENEMY OBSERVATION**
- **DECEIVE THE ENEMY**
- **USE OF PROJECTED SMOKE SHOULD BE COORDINATED WITH THE EMPLOYMENT OF THE SMOKE PLATOON**

FM 3-101-

1

TRAIN THE FORCE



SMOKE IN THE DELIBERATE ATTACK



APPLICATION OF SMOKE IN THE DELIBERATE ATTACK

SCREENING THE LINE OF DEPARTURE
SCREENING VULNERABLE FLANKS
SCREENING OPEN AREAS
SCREENING AN OBSTACLE BREACH
SUPPORT DECEPTION OPERATIONS

PLANNING CONSIDERATIONS

TEMPO - THE M1059 MECHANIZED SMOKE SYSTEM CANNOT KEEP PACE WITH THE M1A1 AND M2. MAX SPEED IS APPROXIMATELY **45 MPH** HOWEVER, FULLY COMBAT LOADED WITH FOG OIL SPEED IS REDUCED TO **25 MPH**

MISSION DURATION - THE M1059 CAN GENERATE SMOKE FOR A MAXIMUM OF **TWO HOURS** BY OPERATING ONLY **ONE GENERATOR**. SMOKE PLATOONS EXECUTING LONG DURATION OR MULTIPLE MISSIONS MUST REFUEL

FM 3-101-

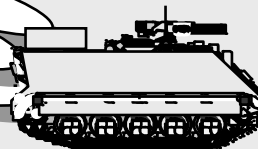
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TRAIN THE FORCE



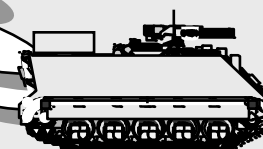
SMOKE APPLICATIONS IN A DELIBERATE ATTACK

SCREENING AN OBSTACLE BREACH



- DIFFICULT DUE TO ENEMY OBSTACLES COVERED BY FIRE
- SMOKE UNITS MUST CONSIDER RANGE OF ENEMY DIRECT FIRE WEAPON SYSTEMS
- USE OF GENERATED SMOKE DEPENDS ON FAVORABLE STEERING WINDS
- WINDS BLOWING FROM ENEMY SIDE OF OBSTACLE NEGATE THE USE OF GENERATED SMOKE
- WHEN WIND DIRECTION IS UNFAVORABLE, THE USE OF PROJECTED SMOKE MUST BE CONSIDERED

SCREENING THE LINE OF DEPARTURE



- LARGE SMOKE HAZES, STARTED WELL BEFORE LD CAN CONCEAL THE INTENDED ROUTE OR AXIS OF ADVANCE
- FRIENDLY FORCES CAN USE SMOKE TO CONCEAL THEIR MOVEMENT AGAINST AN ENEMY THAT HAS A CLEAR AND UNHINDERED VIEW OF FRIENDLY MANEUVER
- FRIENDLY FORCES CAN MANEUVER WITHIN THE SMOKE HAZES, CHANGE SCHEME OF MANEUVER TO ATTACK THE ENEMY IN A UNEXPECTED POINT

FM 3-101-1



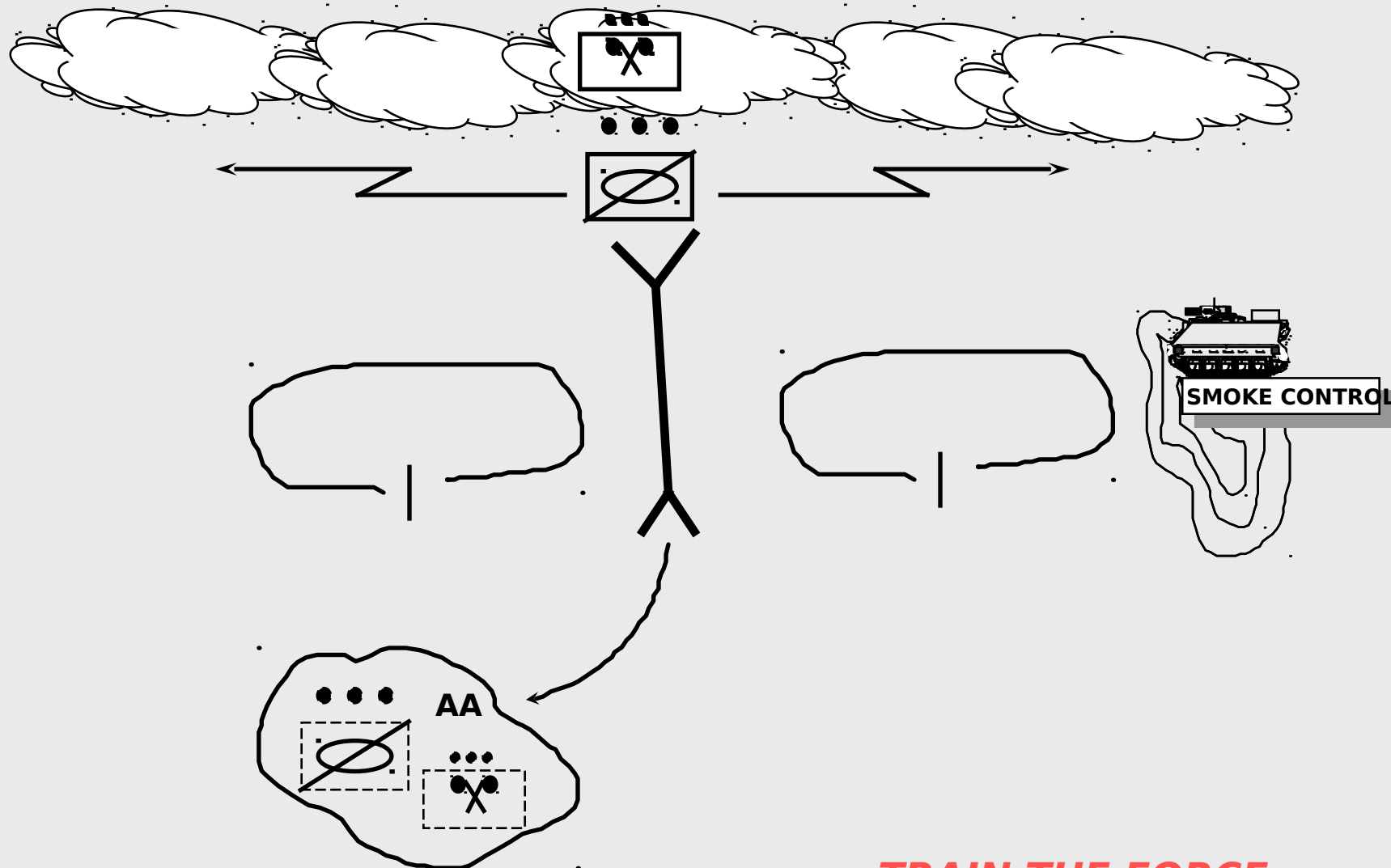
DID WE INCORPORATE SMOKE IN THE DEFENSE?



SMOKE IN THE DEFENSE



CONCEAL THE WITHDRAWAL OF THE SCREEN / GUARD FORCE



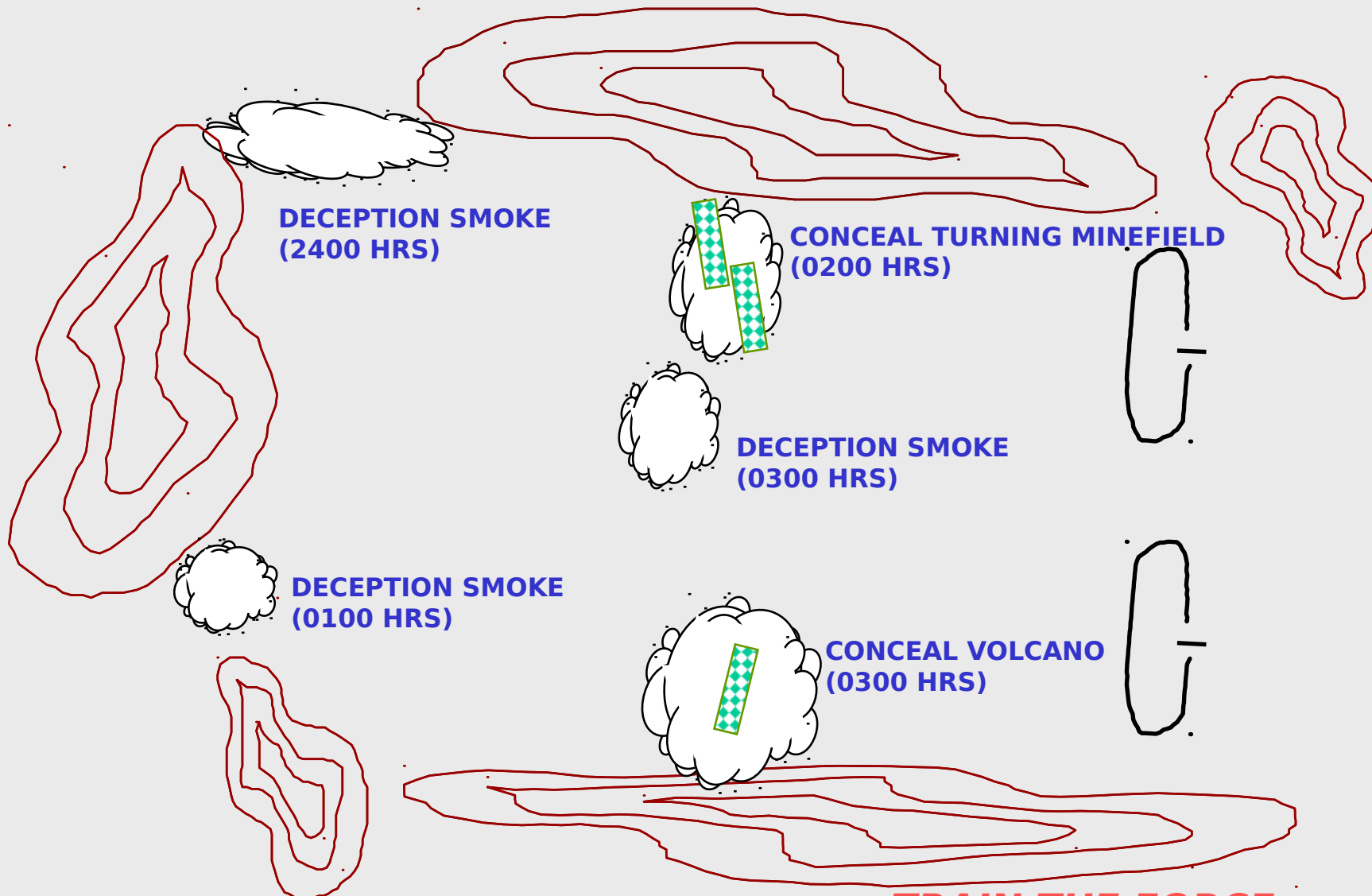
TRAIN THE FORCE



SMOKE IN THE DEFENSE



CONCEAL THE EMPLACEMENT OF KEY OBSTACLES WITH DECEPTION



TRAIN THE FORCE



SMOKE IN THE DEFENSE



- CONCEAL WITHDRAWAL OF SCREEN / GUARD FORCE
- CONCEAL WITHDRAWAL TO SUBSEQUENT / ALTERNATE POSITIONS
- CONCEAL MOVEMENT OF RESERVE FORCE
- CONCEAL EMPLACEMENT OF KEY OBSTACLES
- OBSTACLE EMPLACEMENT DECEPTION



INTEGRATING SMOKE INTO THE OPERATION



SMOKE IN DECEPTION

- DRAW ATTENTION - AWAY FROM REAL, TOWARD FALSE ACTION**
- CREDIBILITY - COORDINATE WITH NOISE, HEAT, RADIO TRAFFIC**



UNITS OPERATING IN SMOKE



- **COORDINATE USE TO PREVENT DEGRADATION TO OWN FORCES - BLIND TARGET ACQUISITION, SLOW MOVEMENTS, SILHOUETTE ELEMENTS**
- **USE COVER, CONCEALMENT - ENEMY MIGHT SEE THROUGH SMOKE**
- **USE UN-OBSCURED WEAPONS TO COVER BY FIRE**
- **USE WEAPONS WHICH SEE THROUGH SMOKE**
- **PLAN FOR ENEMY COUNTERMEASURES - FA, ADDITIONAL SMOKE AREAS, RELOCATE**



SMOKE ASSETS



- **CHEMICAL SMOKE UNITS - LARGE AREA SMOKE SUPPORT;
EACH SMOKE PLATOON CAN PROVIDE A SMOKE HAZE 600
- 1500 METERS IN WIDTH**
- **FIELD ARTILLERY - HC OR WP**
- **UNIT LEVEL - MORTAR, SMOKE POTS, HAND GRENADES,
40MM GRENADES**
- **AVIATION - 2.75 IN ROCKETS (WP)**
- **OTHER - VEHICLE SELF PROTECTION SYSTEMS,
BATTLEFIELD SMOKE / DUST**



WHAT TO EXPECT FROM SMOKE



- **DEGRADE VISIBILITY**
ENEMY OBSERVATION, COMMUNICATION
ENEMY TARGET ACQUISITION
OWN VISIBILITY OF BATTLEFIELD
DEGRADE MOBILITY - WHOEVER IS IN SMOKE
- **CONCEAL FRIENDLY FORCES - SMOKE IS NOT COVER,**
SEE THROUGH WITH THERMAL SIGHTS
- **DECEPTION - COORDINATED PACKAGE**
- **RESOURCE INTENSE**



LIMITATIONS AND CONSTRAINTS



- **WINDS - FAVORABLE YES/NO, INVERSION, DIRECTION, SPEED, THERMALS; OTHER WEATHER LOW IMPACT**
- **SMOKE ASSETS - UNITS, SUPPLIES, AVAILABILITY, PROJECTED SHORT DURATION**
- **SMOKE SAFETY HAZARDS - WP FIRES, MASK IN HC (CARCINOGENIC), WP GRENADES EXPLOSIVE**
- **POTENTIAL EFFECT ON OWN FORCE OPTEMPO**



DECISIONS THAT SUPPORT SMOKE



**INTENT - DECEPTION, CONCEAL MOVEMENTS / POSITIONS /
ACTIVITY, OBSCURE ENEMY TARGET ACQUISITION**

**TASKS - WHO (ASSET), WHAT (TYPE OF SMOKE), WHERE, WHEN
(TRIGGERS), HOW LONG, FOLLOW ON MISSIONS**

**HOW MUCH DEGRADATION TO OWN VISIBILITY / MOBILITY ACCEPTABLE
(WHERE / WHEN NO SMOKE)**



FEEDBACK FROM ACTIONS AND DECISIONS



FROM BATTLE STAFF

**SMOKE PLAN - WHAT, WHERE, BY WHICH ASSETS, TIMING,
PRIORITY, SUPPORT**

**COORDINATION - MONITOR PROGRESS, ADJUST PLANS,
ADJACENT UNIT IMPACT, SUPPLY, SECURITY, DELIVERY UNIT
ACTIONS / TIMING, DECEPTION PLANS**

FROM SMOKE ELEMENT

**SUPPORT REQUIREMENTS, COORDINATE MOVEMENTS TO MAKE
SMOKE WITH UNITS/STAFF**



SMOKE EMPLOYMENT OFFENSIVE USES



SMOKE SOURCE	ARTY	MTR	SG	SP
BLIND ENEMY OBSERVATION/RECON	✓	✓	✓	
OBSURE UNITS FROM ENEMY DIRECT FIRE WEAPONS	✓	✓	✓	✓
ISOLATE ENEMY DEFENSIVE POSITIONS	✓	✓	✓	
CONCEAL FRIENDLY ACTIVITY			✓	✓
SCREEN AN ASSAULT FORCE MOVEMENT			✓	
CONCEAL BREACHING OPERATIONS	✓	✓	✓	✓
DEFEAT INFARED TRACKING SYSTEMS	✓	✓	✓	✓
SCREEN FLANKS			✓	
SCREEN PASSAGE OF LINES			✓	✓
SCREEN RIVER/BRIDGE CROSSINGS	✓	✓	✓	✓
MARK OR SILHOUTTE ENEMY POSITIONS	✓	✓		
MARK FRIENDLY POSITIONS				✓
DECEPTION	✓	✓	✓	✓

ARTY = DS/GS ARTILLERY

MRT = UNIT MORTARS

SG = SMOKE GENERATORS (MECHANIZED OR MOTORIZED)

SP = SMOKE POTS



SMOKE EMPLOYMENT DEFENSIVE USES



SMOKE SOURCE	ARTY	MTR	SG	SP
BLIND ENEMY OBSERVATION/RECON	✓	✓	✓	✓
SLOW/DISRUPT MOMENTUM OF ENEMY ATTACK	✓	✓		
SEPARATE OR ISOLATE ATTACKING ECHELONS	✓	✓		
COVER REINFORCING, REPOSITIONING, OR RESERVE			✓	✓
COVER DISENGAGEMENTS	✓	✓	✓	✓
DENY COUNTER AIR ASSAULT ROUTES			✓	✓
SILHOUTTE ATTACKING ECHELONS	✓	✓		
DEGRADE PRECISION - GUIDED MUNITIONS			✓	✓
SCREEN OBSTACLE EMPLACEMENT			✓	✓
DECEPTION	✓	✓	✓	✓
DECEIVE THE ENEMY TO LOCATION OF ME AND BPs			✓	
CONCEAL HOLDING AND STAGING AREAS			✓	

ARTY = DS/GS ARTILLERY

MRT = UNIT MORTARS

SG = SMOKE GENERATORS (MECHANIZED OR MOTORIZED)

SP = SMOKE POTS



SMOKE GENERATOR UNIT CAPABILITIES



TYPE OF ORGANIZATION	POINT SOURCE S	MAXIMUM SCREEN AREA (BLANKET)	MAXIMUM SCREEN AREA (HAZE)
M1059 Smoke Platoon (Hvy Div Chemical Company)	6	1.2 km x 1.4 km	1.4 km x 3.6 km
M1059 Smoke Platoon (Corps Mech Chemical (SG) Company)	7	1.3 km x 1.4 km	1.5 km x 3.6 km
M1037 Smoke/Decon Platoon	6	1.2 km x 1.4 km	1.4 km x 3.6 km

MAXIMUM PLANNING FACTORS FOR MOBILE SMOKE COVERAGE

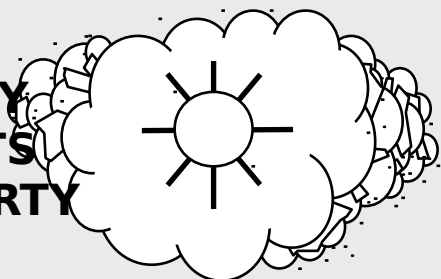
TRAIN THE FORCE



SYNCHRONIZED EMPLOYMENT OF SMOKE IN THE ATTACK "A WAY"



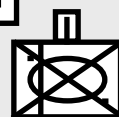
KNOWN ENEMY
STRONGPOINTS
SMOKED BY ARTY



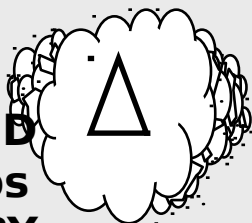
SPT FORCE
MANEUVERS INTO
PSN & FORMS
BASE OF FIRE



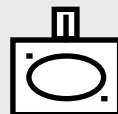
COVERED BY
SMOKE BREACH
FORCE
MANEUVERS INTO
PSN



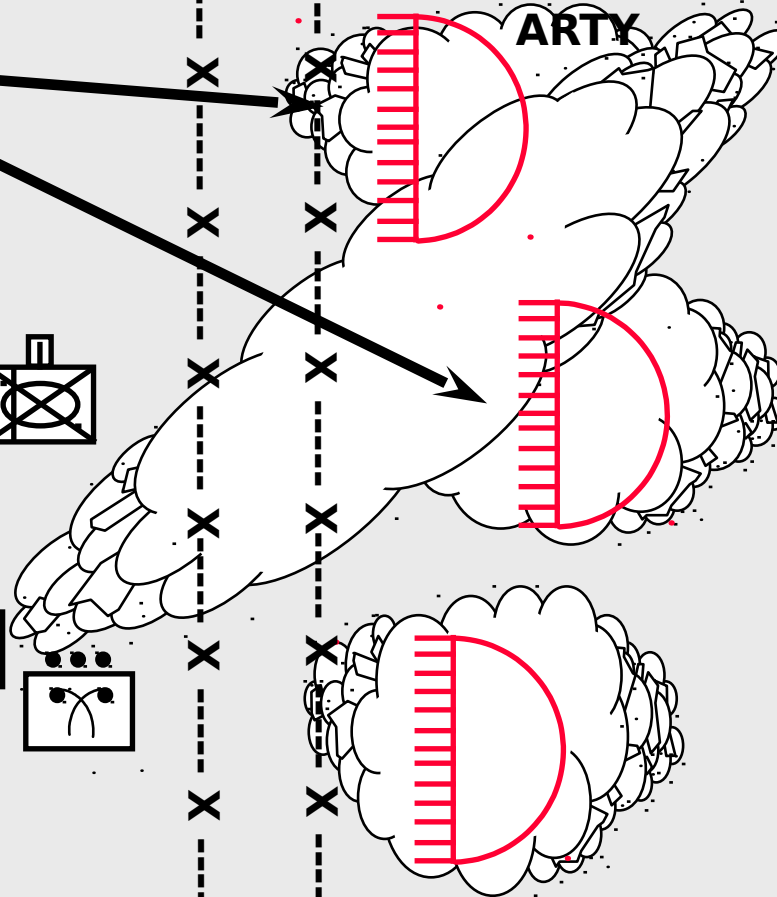
KNOWN
ENEMY &
SUSPECTED
ENEMY Ops
SMOKED BY
ARTY



SMK PLT
ESCORTED BY
SECURITY MAKES
CURTAIN OF SMK
BETWEEN POP &
ENEMY



KNOWN &
SUSPECTED
ENEMY PSN
SMKD BY
ARTY



TRAIN THE FORCE



QUOTE



**“WHETHER OR NOT GAS WILL BE
EMPLOYED IN FUTURE WARS IS A
MATTER OF CONJECTURE, BUT THE
EFFECT IS SO DEADLY TO THE
UNPREPARED THAT WE CAN NEVER
AFFORD TO NEGLECT THE QUESTION.”**

**-- FINAL REPORT OF
GENERAL**

**JOHN J. PERSHING
1920**

TRAIN THE FORCE



QUOTE



**“ONE OF THESE DAYS IT’S GOING TO HAPPEN,
WE’RE GOING TO HAVE TO FIGHT A CHEMICAL
WAR. AND WHEN THAT HAPPENS, WE NEED TO
BE AS READY AS WE CAN POSSIBLY BE AND
WE NEED TO BE AS WELL TRAINED.”**

GENERAL H. NORMAN SCHWARZKOPF



QUOTE



**“.....WE CAN ALL BE DYING RIGHT NOW
BECAUSE
WE WERE NOT PREPARED TO DO OUR MISSION
(UNDER NBC CONDITIONS).”**

**MORTAR PLATOON SERGEANT
LIGHT INFANTRY COMPANY
LIGHT FORCES CANE FIELD TEST
FORT HUNTER LIGGET, 1992**



QUOTE



“COMBAT DECISIONS THAT HAD LITTLE REFERENCE TO GAS WARFARE OFTEN RESULTED IN INCURRING OR AGGRAVATING GAS CASUALTIES.”

“....GAS INSTRUCTORS REMINDED THEIR STUDENTS THAT IN ‘CASE OF GAS ATTACK, THERE ARE ONLY TWO CLASSES OF SOLDIERS, THE QUICK AND THE DEAD.’”

CHEMICAL WARFARE IN WORLD WAR I
THE AMERICAN EXPERIENCE 1917-1918



QUOTE



**“MAJOR MURPHY TOLD ME THAT HE COULD NOT
ADD
SMOKE IN THE PLAN SINCE THE STENCIL HAD
ALREADY BEEN CUT. THAT WAS ONE OF THE
MOST FOOLISH REMARKS THAT I HEARD DURING
WORLD WAR I.”**

**GENERAL GEORGE S. PATTON, JR
PATTON’S DIARY, SEP 8, 1918**



QUOTE



“MY NIGHTMARE WAS THAT OUR UNITS WOULD REACH THE BARRIERS IN THE VERY FIRST HOURS OF THE ATTACK, BE UNABLE TO GET THROUGH, AND THEN BE HIT WITH A CHEMICAL BARRAGE. WE’D EQUIPPED OUR TROOPS WITH PROTECTIVE GEAR AND TRAINED THEM TO FIGHT THROUGH A CHEMICAL ATTACK, BUT THERE WAS ALWAYS THE DANGER THAT THEY’D END UP MILLING AROUND IN CONFUSION --- OR WORSE, THAT THEY PANIC. THE UNITED STATES HAD NOT FOUGHT IN A GAS ATTACK SINCE WORLD WAR I. THE POSSIBILITY OF MASS CASUALTIES FROM CHEMICAL WEAPONS WAS THE MAIN REASON WE HAD SIXTY-THREE HOSPITALS, TWO HOSPITAL SHIPS, AND EIGHTEEN THOUSAND BEDS IN THE WAR ZONE.”

**GENERAL H. NORMAN SCHWARTZKOPF
CINC CENTCOM
DESERT SHIELD/STORM, 1991**